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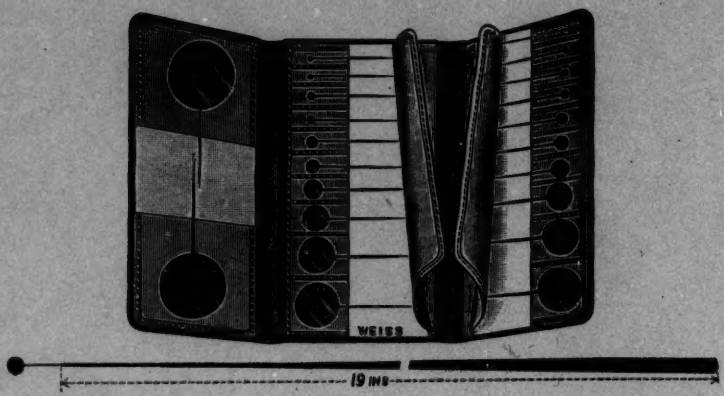

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OF
OPHTHALMOLOGY.

FEBRUARY, 1917.

COMMUNICATIONS.

SOME ECCENTRICITIES OF INDIAN OPHTHALMIC PRACTICE.*

BY
R. H. ELLIOT,
LONDON.

AFTER many years of practice in India, I had become so accustomed to the nature of my surroundings that their strangeness did not strike me, and I had learnt to accept things as I found them in my daily life. When, however, during my later years, I had the privilege of receiving distinguished visitors from many parts of the world, my attention was arrested by the extraordinary interest they took in matters which to me had become the routine happenings of an exiled existence. Kipling, the Poet of Empire, has sung that:

> "The strangest things of Kew, are the facts of Khatmandhu,
> "And the crimes of Clapham chaste in Martaban."

It seemed possible to me that it might interest you to hear something of the daily experiences of an Indian surgeon. I do not pretend that the paper is exhaustive, or that it covers the ground. It is rather in the nature of desultory leaves from a notebook. The slides, which I am about to show you, were taken in the Madras Ophthalmic Hospital to illustrate a popular lecture, given under the auspices of one of the leading Student Societies of India, and presided over by the Surgeon-General with the Government of Madras. The object was to interest educated Indian gentlemen, and to secure their co-operation in the task of combating the wide-spread and

* Oxford Ophthalmological Congress, July 14th, 1916.

appalling ignorance on the subject of the treatment of eye diseases in India.

I shall confine myself mainly to speaking of the treatment of disorders of the conjunctiva. Some idea of the prevalence of such disorders may be gained from the statement that, during the epidemic seasons, I have seen in a single morning, 30, 40, 50, or even more cases of catarrhal ophthalmia, presenting themselves among the new cases at the Government Ophthalmic Hospital, Madras. When one remembers that this same kind of thing is occurring all over the land, one can see how difficult it is to form a true conception of the enormous mass of conjunctival disease prevalent in a country like India. On the other hand, the provision of suitable medical aid is still in its infancy, and it consequently is not strange, that a large part of the treatment passes into lay hands.

It is commonly believed that in India the woman is in a state of slavish subjection, and that she exercises little influence on the lives of her men folk. Such an idea is the outcome of the superficial observations of visitors of the stamp of Paget, M.P. In sickness and in health, the Indian woman is a factor to be reckoned with, as she is, and indeed should be, the wide-world over. Where doctors are scarcest, her responsibilities are greatest, and she does her best to rise to them without fear of failure. Most Indian wives and mothers have favourite prescriptions for the treatment of the commoner affections to which their families are liable, and there must be few indeed of them who are not prepared, when occasion arises, to deal with the widely prevalent catarrhs of the conjunctiva. Their remedies are very diverse. Some of them are comparatively harmless; for example, human milk, which especially when squirted into the eye straight from the breast, has a high reputation for healing power, and possibly has something to recommend it. Many of the other remedies are much less harmless; but to find the quintessence of danger, we must seek for it, not in the homes of the people at large, but in the "laboratories," if I may call them such, of the amateur village expert. Such specialists are usually old ladies, whose reputation as eye doctors rests largely on their weight of years. The idea that a man of 40 years must be either a fool or a physician is far wider spread than the land that gave it birth, and King Charles' witty, if offensive, comment, that a man might be both, is as true of one country as of another. Certain it is that the expert lady of an Indian village possesses an ignorance of her subject as colossal as her confidence in her own powers. Not for her, the trivial remedies of the wife and mother. She gathers her herbs in the right phase of the moon, and compounds them by means as devilish as her intentions are angelic. I am far from wishing either to blame or to disparage her. The highest award that the world has known was made to a

woman, whom many blamed, in the words "she hath done what she could." Doubtless the mercenary side of her profession may appeal to the Indian hag as it may even to the Western specialist, but we must at least concede that she does her best. Her confidence in her remedies seems unshaken by rude failures, a state of affairs which can only be explained by her colossal ignorance and her blind fatalism. "It is written on the forehead of certain of her patients that they are to 'go blind'; what can she do to alter the inexorable decrees of fate? Meanwhile, if they will sit down, she will place very precious medicine in their eyes." Few things struck me as more pathetic in India than the blind confidence of the people in "Medicine," spelt with a huge "M." It is illustrated by the attitude of those who visit the out-patient rooms. A man has travelled hundreds of miles to see the great specialist, whose reputation has filtered through dark places to the remote corner of the earth in which his village lay far-flung in the eastern sunshine. He has begged or borrowed the means to take him there, or has spent the savings of a life-time on the journey, and at last he has reached the almost sacred precincts. He is met by officials, his name and many other details are registered; he is marshalled into a line, which fades ahead of him whilst it lengthens behind, until he reaches "the presence" at last. What is his mental attitude as he addresses the surgeon or physician "as his God, his father, and his mother"? Is it one of exaltation, or of excitement? Oh, no! it is just that which inspires him when he visits a shrine to which he has travelled to fulfil a vow:—a blend of ignorance, fear, confidence, and hope, lost, hidden, overwhelmed in the one great idea that so far as he is concerned, his part has been fully played. Has he not come to the man who gives sight like a God? What remains for him to do? Absolutely nothing! So strong is this idea that many of the illiterate patients can only with difficulty be induced to answer questions as to their condition and past history. To me they often seemed to expect the treatment meted out at a Chicago factory; they have entered at one end, supplicants for surgical aid; there remains nothing to be done till the great machine grinds them out "cured" at the other end: "Their's not to reason why." Such an attitude has many advantages to the surgical administrator, but it has obvious drawbacks from the patient's point of view. It is the spirit I have described, and the lack of medical opportunity, that explains the horrors of which I am to-day speaking.

I spoke of the village laboratory. Its roof is the sky, or possibly a leaf lean-to; its floor the sun-baked earth, and its tools the "mamoti," or Indian spade, of which Mr. Atkins is reported, in his national insularity, to have said, "What can you expect of a people that dig towards their own bellies?"

Here you see (Fig. 1) the process of manufacturing a medicinal preparation in being. On the back of the mamoti are being prepared, under the influence of fire, one of the very precious pastes or powders of the specialist. The common ingredients of such

FIG. 1.

preparations are the juice of the leaves of the tamarind tree (which is very acid and irritating), the juice of fresh limes (a small variety of lemons), alum, various kinds of pepper, iron filings, human milk, human urine, cow-dung (the cow being a sacred animal), ghee (or clarified butter), and a great variety of other substances. Each *savant* has a personal recipe for the preparation of his or her choice.

It is not difficult to imagine the amount of harm which can be done to an eye suffering from one or other form of conjunctivitis, by the insertion into the conjunctival sac of one of these very irritating pastes or powders. A most unhappy illustration of the harm done is furnished by the next picture (Fig. 2) which shows a family of three children, brought by their father from a far-away country district to the Madras Eye Hospital. A few weeks earlier these children had been attacked by some form of conjunctivitis; an irritating paste was applied, with the result that five of their six eyes were totally deprived of all sight, while the sixth retained but little vision. I have seen some sad things during the third of a century that I have been a student of medicine, but I cannot remember any that exceeds the pathos of that picture as I see it again to-day against a background

of Indian sunshine—a tall, thin resigned man, walking at the head of the procession of his three blinded children, who clung to the stick he held out behind him, and so followed each other in a line back to their hopeless home, resigned, submissive, uncomplaining, and

FIG. 2.

crushed. If the tragedy in this case seemed the more terrible inasmuch as the weight of it beat a whole family to the earth, it is but an illustration of what is happening day after day in many Oriental countries.

Before I pass on to speak of granular ophthalmia and its treatment by indigenous practitioners in India, I should like to say a word on another abuse of these same pastes and powders. In India, fevers of various kinds are rife, and not infrequently they run a severe course. To such a case the Indian vaidyan or medical man is called in, and if he finds the patient in a comatose or semi-comatose condition, he applies drastic means to restore him to consciousness. Should those means fail, both he and the patient's friends bow to the inscrutable decree of a stern providence. On the other hand, should the patient's recuperative powers pull him through, and consciousness show signs of returning, despite the well meant but evilly carried out efforts of the expert, the credit for the recovery is claimed by the vaidyan and unhesitatingly given by the grateful friends. Sometimes the methods, though drastic, produce no permanent ill effects, but there is one custom as common

as it is mischievous, of which nothing too bad can be said. It is that of introducing one of these irritant pastes into the conjunctival sac of a comatose patient, with a view to stimulate the brain by means of the pain thus inflicted, and so to restore the patient to consciousness. It is bad enough to insert such irritants into the eye of a conscious patient, who would at once do everything in his power to rid his conjunctival sac of the noxious mass. It is far worse in the case of an unconscious sufferer who makes no effort to get rid of the dangerous irritants, which consequently lie a long time in contact with his cornea. The latter membrane is frequently so severely damaged that it becomes permanently opaque; not seldom a portion of the corneal substance sloughs away, leading to protrusion of some of the contents of the eye, and the possibility of all the appalling consequences which follow so often in the train of such disasters. Look at the photograph (Fig. 3) now shown:

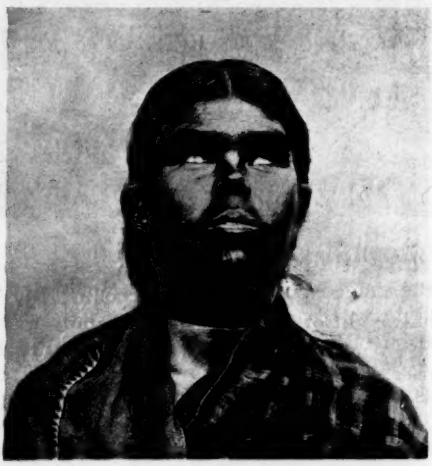

FIG. 3.

This woman carries her history written on her eyes for any intelligent student to read. You can see from the picture that the lower parts of her corneæ are totally destroyed, and replaced by cicatricial tissue, in which were to be seen the stains left by impacted uveal structures.

There is one condition with which these cases may easily be confused, and to which I would therefore like to devote a little time just now, *viz.*, the ulceration and consequent leucomata of the corneæ, dating from an old attack of small-pox. I am not prepared to dispute that a certain number of cases of corneal trouble following small-pox may be due to local pustules, but I am confident that the

great majority of cases one sees in India, which date their corneal trouble back to an attack of small-pox, are to be attributed to the results of exposure. The patient lies for hours, or even for days, on the floor of a dusty mud hut, in muttering delirium or in coma, with the eyes turned up; the lower part of the cornea and the adjacent conjunctiva are, consequently, exposed to the desiccating influences of wind, dust, and heat, and to the insults of flying creatures of many forms, and this too at a time when nutrition is at its lowest ebb. The man who fails to appreciate these facts clearly, never gets the hang of the picture presented to him day by day in the Eastern out-patient room, whilst the observant student of the hand-writing on the damaged eye, will often be in a position to tell his patient of happenings in her hazy past, in a way that might well claim the envy and admiration of a fortune teller.

It will be understood, from what has already been said, that we have a ready explanation, on physical grounds alone, for the fact that the lower part of the cornea is most severely affected in these cases. A powder, or a stiff paste, will naturally remain in the lower *cul-de-sac*, and will there do its work with comparatively little interruption. The vaidyan and his imitators do not, however, confine themselves to pastes or powders. Instead, they sometimes instil into the eye one or another variety of drops, some of which are intensely irritating, whilst others owe their potency for mischief to the organisms they contain. Amongst the latter may be classed human urine. One case stands out prominently in my memory. It was that of a wealthy and highly-educated Burman, who was advised to wash his eyes with his own urine. He did so, and practically lost the sight of both thereby, for his urine contained gonococci. I have seen a similar accident as a result of washing the eyes with virgin's urine, a far from uncommon practice. Again, I have been told by trustworthy Indian practitioners that many of the midwives make a practice of washing the infant's eyes in the mother's urine immediately after birth. Shades of Credé! Is it possible that an informant was correct when he whispered to me that such atrocities are not unknown even in the British Isles?

Fig. 4 will show the havoc that irritating and bacteria-laden fluids will wreak upon the eye.

It will be of interest to leave this topic for a moment and to pass on through time to study the after-results of these forms of treatment as we meet with them in the out-patient room. Huge staphylomas of the cornea are of very frequent occurrence in the records of any large Eye Hospital in India. There is something uncanny in the appearance the patient presents. The lids frequently constrict the base of the staphyloma, the anterior portion of which then bulges through the palpebral slit in front of the skin surface. The mushroom-like mass weirdly follows every movement of either globe. Such an

appearance must be comparatively rare in Europe. In Madras it was so common that I had to request my assistants to cease collecting these instances of large staphyloma, as they were taking up more museum room than we could afford.

FIG. 4.

Fig. 5 illustrates the condition well, and the bottle specimens probably do so even better. I am indebted to Major H. Kirkpatrick for kindly allowing me to have these sent home, after my retirement from India.

Before leaving the subject of the treatment by Indian remedies of conjunctival diseases, there is a lighter side to which one may turn for a moment. For my information on it, I am largely indebted to one of my former medical officers, who worked under me in the Eye Hospital at Madras, Dr. Ekambara Iyer. There is an element of irresistible comedy in the serious recommendation that a disease of the eye should be treated by rubbing the sole of the corresponding foot with medicated oil. The effect is heightened by the explanation that the inunction "brings down the heat from the head." Still more amusing is the prophylactic treatment of presbyopia by burning the excreta of a rabbit to ashes, making a paste by mixing these ashes with butter, and daily rubbing the ointment into the eye.

A method of treating the corneal trouble by getting a friend to chew raw onions, and with his mouth full of the half-masticated mass, to blow on the affected eye, is actually in vogue. It reminds me of an arrangement I once obtained from Italy, by means of which

super-heated air was blown upon the eyeball of patients suffering from immature cataract. The distinguished inventor suggested that the maturation of the cataract would be hastened thereby, the principle being that supposed to underlie the formation of glass-

FIG. 5.

blowers' cataract. I cannot say that the "hot air" produced any effects on the cataracts, but it resulted in such apparent mortality amongst the relatives of the patients subjected to the treatment that I was constrained to abandon any further experiments in the same direction. I may be permitted to explain that when an Indian patient desires to change his doctor, he is too polite to state the matter crudely; instead he slays a relative, preferably a mother-in-law, with his tongue, and hastens away to bury her. I think that most Westerners would adopt a somewhat similar course under the influence of eye treatment by oniony breath. The only danger would be that they might, like Mark Twain, be inclined to provide the corpse on the spot, and select the surgeon for choice.

Now, a word on the treatment of granular ophthalmia, a disease which takes an appalling toll of human sight in India. I say very deliberately, and as a result of an exceptionally large experience in the treatment of this disease, that it should never be permitted to cause the slightest diminution in the acuity of a patient's vision if treated from the first. The pannus and keratitis of trachoma, with the subsequent clouding of the cornea, are all preventable, if the patient seeks relief early enough. When, however, he waits until the harvest has been gathered in, or until he can get friends to accompany him to the nearest hospital, or when, as not infrequently happens, he relies on home treatment until it is too late, the consequences are

most serious. It has been mentioned that scars of the lower part of the cornea are suggestive of exposure-ulceration, or of the introduction of irritating drugs into the lower *cul-de-sac*. Equally characteristic is the scarring of the upper part of the cornea conveyed to that area from a trachomatous condition of the upper lid. It is one, literally of the every day, nay more, of the every hour appearances seen in the Madras Out-patients' Room. Not a few of the cases present evidence of past treatment of a very drastic kind. Irregular black streaks in the substance of a scarred palpebral conjunctiva show where an energetic vaidyan, having scraped the part, has rubbed in some form of powder, which has usually been burnt beforehand. Deep elongated cutaneous scars running parallel to the lid-edge testify to past cauterisations, made with the red-hot iron, and aimed to secure eversion of the lid-edge. Sometimes these are fairly successful, but in a number of cases, the cauterisation either fails to produce the desired effect, or else destroys too much tissue, with unfortunate results. Deeper and more extensive scars, stretching across the forehead from temple to temple, bear witness to violent and often ineffectual efforts made in the past to secure counter-irritation.

Those who wish to evade an unpleasant duty in India not infrequently do so by dropping some form of irritant into the conjunctival sac. The most commonly used substance is "chunam" or lime. The walls of every Indian house are periodically washed over with chunam instead of being papered. The malingerer has, therefore, a very short distance to go for the irritant which he requires. He scrapes a few flakes from the wall with his knife, powders them between his finger and thumb, draws down the lower eyelid, and drops in the irritant. Half an hour later he presents himself before his employer with abundant evidence of catarrh of the eye. This trick was very freely resorted to in Madras by the police. Latterly they were inclined to discard it on account of the "devilish cunning" displayed by the staff of the Ophthalmic Hospital in detecting the ruse. The diagnosis is really very simple, for although actual particles of lime can seldom be found in the conjunctival sac, the appearances presented are characteristic, since an acutely catarrhal condition of the lower *cul-de-sac* is associated with a practically normal appearance of the upper portion of the conjunctiva, a phenomenon completely at variance with what is observed in ordinary catarrh. The milky surface of the inflamed membrane is another point to which the attention of any one interested should be directed. The same method of malingering is adopted by sepoys, convicts, and others. Major H. Kirkpatrick told me of a case which came under his notice in the Andaman Islands, in which a convict, desirous of escaping work for a few days, made use of chunam. Unfortunately, he overdid the dose, with the result

that he lost all vision in both eyes. I have never seen quite so extreme a case, although I have met with instances in which the malingerer accomplished much more than he set out to do. In this connection Fig. 6 is of interest, as it shows a double symblepharon produced by dropping an irritant into the lower *cul-de-sac*.

FIG 6.

A word as to the astrologer and the part he plays not only in Indian but also in European medicine. Most educated Indians, before entering upon any large undertaking, have their horoscope cast, and consult an astrologer as to the wisdom of the course they propose to pursue. It is not wise to ignore or to despise the influence of these men. Should they give an adverse opinion the patient will either refuse an operation, or will postpone it to what he terms a more favourable time, which, being surgically interpreted, may mean a much less favourable time. Again, the astrologer will tell the patient that the operation should be performed at a particular time. There are certain hours of every day in India which are favourable for the inception of new enterprises, and there are others in which the powers of darkness are reputed to be abroad in such force that it is most unwise to embark on a new undertaking which their malign influences might wreck. Whilst I am opposed to humbug in all forms, I saw very early in my Indian career the very great importance of having my patients' confidence. If a man thinks he is going to do well, he, consciously and unconsciously, assists his medical man; whilst, on the other

hand, the dread of impending misfortune hanging over a bandage-blinded patient may be productive of the worst possible psychical results. I therefore always endeavoured to meet a patient half-way as to the times and seasons. It required very little tact to get the astrologer to fix as the favourable time for operation that most convenient to the surgeon, and so to ensure that the patient embarked on the wearisome time before him with his hopes and confidence high. This is, I believe, the practice of all surgeons in the East.

A form of superstition constantly met with, and deserving of much less sympathy, is that in favour of the use of indigenous drugs. The objection to them is that the preparations are crude and unstandardised to the last degree. Against the employment of such, I steadily set my face. Unfortunately, they are still used and advocated by some of those who should know better. As an instance of this, I may recall the case of a patient, who urgently desired that her medical man should use one of these drugs against my judgment and advice, given in consultation. She insisted on doing so in conjunction with the treatment I had suggested. Later she admitted that the preparation had been useless, but urged in extenuation of the failure, that the leaves had been collected in the wrong quarter of the moon. An Indian medical man, with a good western degree, had told her the right quarter, and she meant to try again. Such instances in which men with a Western education are concerned, are, I am happy to believe, rare, but the bare possibility of such an occurrence as I have mentioned, reveals the black wall of ignorance and superstition with which Western science has to contend in the East.

In conclusion, I would finish where all life begins, at woman, the eternal question of all climes and peoples. I have spoken of the astrologer, and of his influence in deciding whether operation or other treatment should be undertaken. Woman wields a greater, because a more universal, power still. A man will come for himself, or with his child, and seek advice; he will apparently be convinced of its correctness, and will then not infrequently decide that he must seek first "the advice of his women folk." One may rest assured beforehand that their verdict will be against any form of active treatment, and especially against operation. This is not surprising when we remember the secluded life many of these women live, and their lack of anything that can really be called education. The conditions of the East have determined that the training of women in new ideas should lag far behind that of their men folk. A movement for the training of women is now strongly on foot, and will have great results in the near future. Meanwhile, I do not wish to be misunderstood to imply that all Indian women are alike in this respect, for there are many exceptions. I am

speaking of broad tendencies rather than of individuals, and again it is possible that not a few of those who reject Western advice on the ground of "female opposition" are really hiding themselves behind the sahri (the equivalent of the petticoat). In other words, they are repeating the history that began with Adam's excuse in the Garden, that the woman tempted him and he did eat.

A CASE OF MULTIPLE ANEURISMS OF THE RETINAL ARTERIES.

(With coloured plate.)

BY

J. A. PRINGLE, M.D.,

CAPTAIN R.A.M.C.

ANEURISMS of the retinal artery, apart from those variations in calibre associated with arterial disease, are so extremely rare that I think it may be of interest to ophthalmologists if I report the following case at some length:

Case.

Private C. J., aged 23, service 7 months, was sent up to see me by the medical officer in charge of his base, as he had complained of some blurring of vision. On being questioned, he said he had first noticed that his sight was defective some eighteen months previously, that it was much better now than it had been, but that when he tried to use his eyes for close work, *e.g.*, to read a thermometer, the figures got blurred and seemed to move "up-hill." He also said that when he stooped and raised his head quickly, his eyes ached at the back, and that "discs" and "rings" seemed to float in front of him.

He was a fairly well-developed man, apparently healthy, save for a slight tendency to anæmia. There was no sign of thickening of the peripheral arteries. The urine was reported normal.

Family history.—Father alive; said to have diabetes, but no eye trouble. Mother died of cancer. Four brothers and one sister, all healthy, and nothing wrong with their eyes, as far as he knows. No history of tubercle or syphilis.

Previous history.—Patient has always been healthy, no serious illness, no injury; has never worn glasses. He started work as a miner when 16½ years of age, and worked constantly in the pits until two months before enlistment, when he went off work, owing to his vision becoming blurred, and things seeming to go round. The doctor told him then that he had nystagmus. He started work again about ten days before enlisting, and left work to join.

Present condition.—On examination, there is nothing to note externally in either eye; pupils equal and active; tension normal. Slight nystagmus can be elicited in extreme positions of the eyes.

R.V.=6/6 c.+0·5 D. cyl. axis 45°=6/5 partly and J.I.

L.V.=6/5 partly. No refractive error.

L. fundus.—There is some increase of connective tissue round the disc and along the vessels, but there is no sign of medullation at the disc. On following the superior temporal vessels outwards for about 2½ to 3 disc diameters, a large patch of medullated nerve fibres begins to make its appearance (see plate). These fibres start as a compact opaque bundle along the course of the vein, and gradually spread out on either side into long fine silvery threads which follow the line of the main vessels, and gradually fade off into the normal retina about 3 disc diameters further out. At one point the upper of the two main branches of the superior temporal artery crosses behind the vein, and here the artery is almost completely hidden by these fibres. Still further out, and at a lower level, there is another area of medullated fibres, but this patch is much smaller than the first, and is poorly defined, being represented merely by a few faint silvery lines running across the course of the lower branches of the superior temporal vessels.

But the most striking feature in the fundus is the presence of three large swellings along an artery immediately below the first-mentioned patch of medullated fibres; two of these swellings are pale pink with bright reflexes, which gives them a pearl-like appearance, while the third or centre one is of a deep carmine colour.

As the artery along which these swellings are situated presents several other features of interest, I purpose following its course outwards from the disc and describing in detail each abnormality as it presents itself.

The superior temporal artery divides into two branches of equal size at a short distance from the disc (see plate). The upper branch follows the course of the vein, crossing first in front of this vessel, and then, at a short distance further outwards, recrossing behind it. It is upon the lower branch, which runs above the macula and is not involved in the area of opaque nerve fibres, that the aneurisms occur. After giving off two twigs to the macular region, this artery sends a small branch almost vertically upwards and just beyond this point, which is about 3½ to 4 disc diameters from the papilla, there are two small, oval, brightly reflecting spots of a white or pearl-grey colour, lying one beyond the other on the centre of the vessel, with their long axes parallel to its course. There is no increase in the calibre of the artery, and beyond the fact that its normal central light reflex is interrupted by these two spots and that the vessel behind them, except where they actually hide it, shows pink in colour, there is nothing further to note. Immediately beyond the second of these

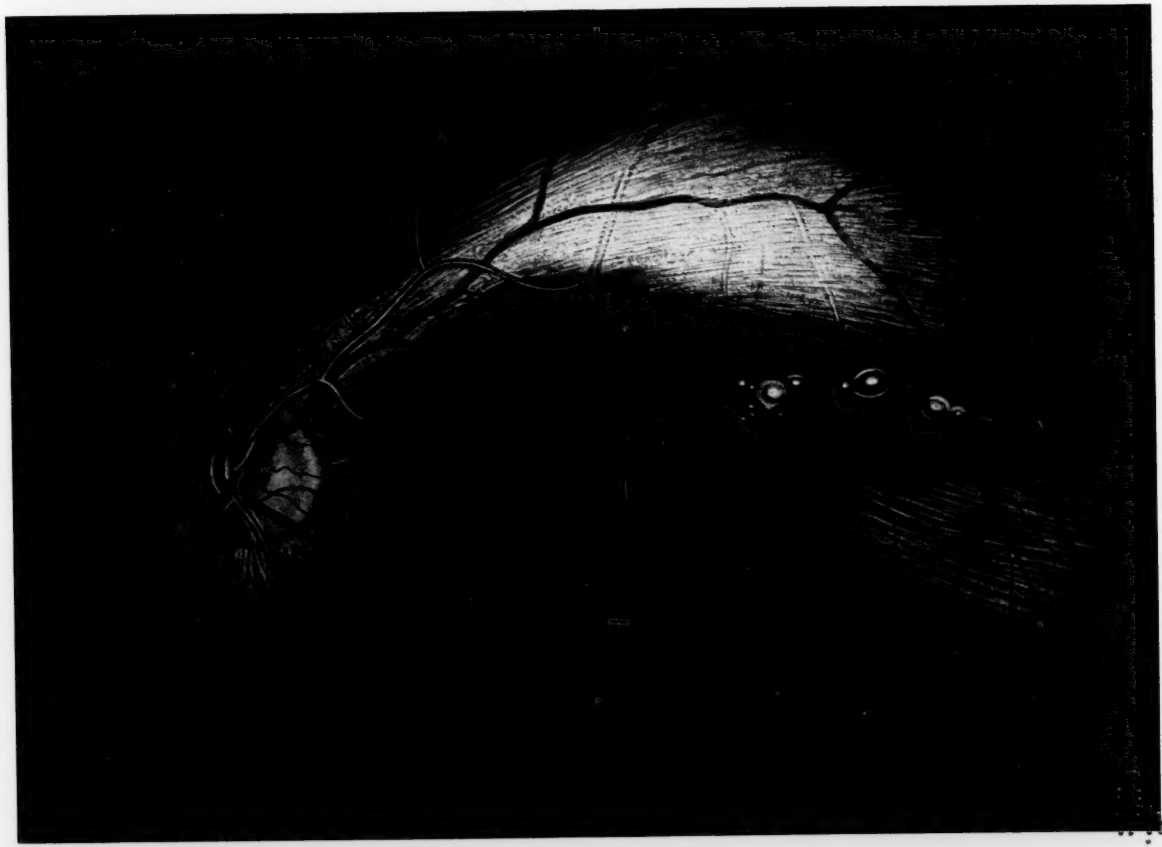

PLATE I.—To illustrate CAPTAIN PRINGLE'S CASE OF "MULTIPLE ANEURISMS OF THE RETINAL ARTERIES."

To face page 88

two dots is a large fusiform expansion, bulging below rather more than above and in size about 3½ times the diameter of the vessel. At the peripheral end of this expansion and before the calibre again becomes normal, there is a second smaller fusiform expansion about twice as large as the diameter of the vessel. In shape these two are like the two bulbs of the old-fashioned soda-water syphon, the length of the first being about four times, and of the second about twice the diameter of the vessel. The appearance of the first expansion is very striking and can best be compared with that of a pale-pink pearl. On the summit of this expansion and slightly below its centre there is an oval area with bright reflex similar in appearance to that of the first two just described, but longer. Curving above and below this reflex can be seen the pale pink shading of the blood-stream, which has a flattened-out appearance; but this, as well as the colour, is probably due to the fact that the blood is seen through a thickened vessel wall. The second or smaller expansion is also pale pink in colour, with a marked reflex on its upper part. It also shows the usual bright oval reflex on the summit. The lower part has a deeper pink colour, probably because here the blood-stream does not appear to take a straight course through the expansion, but fills its lower half, which apparently has comparatively thin walls, while the walls of the upper half seem to be considerably thickened.

For a short distance beyond this point the artery is normal in all respects. It is crossed transversely by a branch of the superior temporal vein, and gives off a small twig below. Next comes a third pearl-grey spot on the anterior surface of the vessel, similar to the two first described. Here, however, the vessel shows a very slight increase in calibre, but the walls do not appear to be thickened. Narrowing a little, but still with a somewhat increased calibre and curving gently upwards, the artery expands into the fourth and most typical of its aneurisms.

In shape this is exactly like the bulb of a Higginson's syringe, measuring about 3½ diameters of the normal vessel in breadth and 4 to 4½ diameters in length. It is of a deep pink or carmine shade throughout, except at its centre, where it shows a bright oval reflex. The walls appear thickened, as they have a distinct whitish outline, but the whole expansion is perfectly uniform and is apparently completely filled with blood.

Beyond this dilatation the artery becomes perfectly normal for a short part of its course, and is crossed by another twig from the superior temporal vein. It takes a gentle curve downwards, and just at the bottom of this curve it shows yet another dilatation. This one is a reproduction of the first two, but is smaller, being scarcely twice the width of the vessel; it has the same appearance of a pale-pink pearl, and seems to bud out from the anterior wall of the artery, corresponding in appearance rather

with the sacculated type of aneurism. The blood-stream can be seen passing behind rather than through its proximal part, the walls of which appear much thickened, while its distal part takes on a deep pink colour, and seems to become full of blood as it gradually diminishes to approximately the normal diameter of the artery.

The furthest out and smallest expansion follows almost immediately on the last-described before the vessel has quite regained its normal size. It seems to spring from the posterior and upper aspect of the artery, showing above the vessel as a small refractile hemisphere, the slightly enlarged artery hiding its lower half. In size it is only about half the width of the vessel, and is probably composed of thickened wall, as the line of the blood-stream can be seen passing across it. For a short distance, about 2 to 3 disc diameters, beyond this expansion, the vessel is slightly enlarged, but shows no thickening or irregularity of its walls; while for the rest of its course in the ophthalmoscopic field, it is perfectly normal.

In the retina, a little way below the first aneurism, there is a minute refractile spot, and on close examination, one can make out a second still more minute grey speck below the Higginson's syringe expansion. No blood-vessel is in connection with either of these.

No enlargement of either the arteries or the veins on the papilla is apparent, nor can the slightest abnormality be detected on any other of their branches as far as they can be traced towards the extreme periphery of the fundus. As compared with the retinal vessels on the disc of the other eye, beyond the fact that the left superior temporal vein is a little fuller than the right, no difference is observable.

The branch of the artery on which the aneurisms occur is normal in every respect up to the point where the first refractile spot appears.

I was unable to detect any spontaneous pulsation, either in the arteries or in any of the expansions. The venous pulse was well marked on both discs. Pressure on the globe gave very distinct pulsation in the arteries, and this pulsation could be traced into the branch with the aneurisms; but I was disappointed in not being able to produce obvious pulsation in any of the aneurisms themselves or in the artery beyond, although by very closely watching the white outline around the "Higginson's syringe" expansion, I satisfied myself that there was a faint but distinct expansile movement, and that the expansion was definitely reduced in size.

R. fundus.—The inferior temporal and inferior nasal arteries and their branches show dilatations similar to those described in the left eye. The majority of these swellings are situated at the extreme periphery of the fundus, but, owing to the slight nystagmus, they are difficult to see, and impossible to examine in detail. In all, 23 dilatations of varying sizes appear in the ophthalmoscopic field, 9 of these being situated on the inferior temporal artery and its branches, and 14 on the inferior nasal artery and its branches.

They are of exactly the same type as those in the left eye, but are rather smaller in size, possibly because they are more peripherally situated. In none of them, nor in the fundus in their immediate neighbourhood, can any sign of recent changes be detected. Both arteries show some apparent thickening of their walls at one or two points in their course between two dilatations; but otherwise, except for the aneurisms, they appear normal. Towards the periphery of the field, and lying above the main branch of the inferior temporal artery, some white markings appear in the retina, which are probably of a similar nature to those described in the left fundus immediately between the two larger dilatations. There is evidence of an increase of connective tissue around the disc and along the vessels in its neighbourhood.

Remarks.

Unfortunately, when on active service, one is able to consult but a very limited amount of the literature available on a subject of this nature. As far as I know, however, no similar case has hitherto been described, but I am open to correction on this point. The question may be asked: "Are these true aneurisms?" Personally, I have no hesitation in saying they are, and this opinion has been endorsed by three ophthalmic surgeons to whom I have shown the case. I do not think any other diagnosis is possible if the following points are considered.—(1) The situation, shape, and general appearance of the swellings; (2) the fact that the "Higginson's syringe" dilatation is completely filled with blood, and that owing to the thickening of its walls, their continuity with those of the artery is easily established; (3) that the blood-stream can be traced through the centre of one of the aneurisms, the walls of which have become so thickened that the calibre of the stream is only slightly increased; and (4) that expansile pulsation and reduction in size can be produced in the largest of the aneurisms by pressure on the globe. Had spontaneous pulsation been present, or even had I been able to produce it markedly by pressure on the globe, it alone would have decided the nature of the swellings; but as this was so poorly-defined that its presence was disputed by two out of the three ophthalmic surgeons who saw the case. I mention this fact last, giving the other arguments precedence. I think, however, that these furnish sufficient proof, leaving the pulsation out of account.

As regards the origin of the condition, I fear I can go no further than to suggest the probability of its being a congenital abnormality. The patient's health is excellent, and a physician, who kindly examined him for me, reported that he could find nothing wrong, so that the changes in the retinal arteries can scarcely be explained as a manifestation of any general disease which might affect the vascular system. On the other hand, the fundi show definite

congenital defects, both in the patches of medullated nerve fibres and in the increase of connective tissue around both discs. There is also the fact that the eyes have normal vision, and manifest no pathological change in any other part of the fundi. Again, there are no signs of recent changes along the vessels or in the neighbourhood of the aneurisms, such as one would expect to find had the disease been progressive, and although the period during which I had the patient under observation (three weeks in all) was too short to be of any help in deciding this point, the condition certainly did not alter, as far as I could judge.

The possibility of this being an early stage in the condition known as arterio-venous aneurism (18 cases of which have been collected and discussed by Coats in his paper in the *Royal London Ophthalmic Hospital Reports*, Vol. XVIII, on massive exudative retinitis), should, I think, be mentioned, although beyond the fact that this disease mostly attacks healthy males of from 22 to 23 years of age, and that it is generally bilateral, there is no similarity either in the history or in the ophthalmoscopic appearances to the case under discussion. The veins in this case have no connection whatever with any of the aneurisms. A case showing venous communication, together with a patch of medullated nerve fibres was, I believe, reported in one of the ophthalmic journals some years ago.

Referring for a moment to the symptoms complained of by the patient, I do not think these had any connection with the changes found in both fundi, but are more probably attributable to the remaining traces of his nystagmus.

In conclusion, I should like to express my thanks to Col. W. T. Lister, C.M.G., consulting ophthalmic surgeon to the British Expeditionary Force, for his interest in the case, and for his confirmation of the ophthalmoscopic appearances.

BILATERAL GLIOMA OF THE RETINA WITH MULTIPLE METASTASES.*

BY

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A CRITICAL examination of the collected statistics of Wintersteiner[1] on glioma of the retina reveals the fact that when malignant characters are borne by this neoplasm they are shown by the extension and spread of the new growth in two ways, namely:—

*A paper read before the Royal Society of Medicine (Section of Ophthalmology) on Nov. 1st, 1916.

(1) By involvement of the extra-orbital structures of the face and head, either by (*a*) direct continuity of growth into the bones and other structures adjacent to the orbital cavity; or (*b*) direct extension of the growth backward into and along the optic nerve to the meninges and the brain; or (*c*) the occurrence of growths in the lymphatic glands in the neighbourhood of the parotid gland, and also occasionally the involvement of that organ.

(*2*) By the formation of metastatic growths in various organs in distant parts of the body.

That the former condition (1) is much more frequently observed than the latter is also shown by Wintersteiner's figures. Out of a total of 497 cases of glioma of the retina, regional invasion occurred :—

In the bones of the cranium and face in 40 cases.
In the brain and meninges in 43 cases.
In the adjacent lymph glands in 46 cases.
In the parotid gland in 9 cases.
In the spinal cord and membranes in 3 cases.

Whereas metastases (*2*) in distant organs were found :—

In the skeletal bones	in 9 cases.
In the liver	in 7 „
In the ovary	in 2 „
In the kidney	in 2 „
In the lungs	in 1 „
In the spleen	in 1 „

Further, in addition to our own case here recorded, in which metastases occurred in the brain and meninges, in the vertebræ, in the mesenteric glands, and in the ovary, we are able to find only five cases recorded since those collected by Wintersteiner, in which metastases in distant organs were found.

In Fehr's[2] case the metastatic growths occurred in the ribs, sternum, and pleura, in the inguinal and mediastinal lymph glands, and nodules were also found between the left lung and pericardium, and adherent in the anterior mediastinum.

In Radcliffe and Goldberg's[3] case metastases were found in the liver, and in Lieber's[4] case in the lungs.

Dabs's[5] case is buried in the obscurity of a Greifswald ***thesis*** to which we are unable to gain access; we are therefore unable to state the distribution of the metastatic growths.

In Gardner's[6] case the organs affected were the sternum, ribs, costo-chondral cartilages, vertebræ, pelvic bones, both femora, and both testicles.

With regard to the frequency of bilateral growths, the collected statistics of Owen[7] show the condition to be bilateral in rather less than 25 per cent. of the cases, for out of a total of 552 cases, 417 were unilateral, and 135 were bilateral.

Four facts connected with the following case are of sufficient interest to make it worthy of being placed on record, namely:—

(1) The presence of advanced growths in both eyes at the same time.

(2) The very advanced condition of the growths when the patient was first brought up for treatment.

(3) The presence of metastatic growths, both by direct extension into the brain and meninges and by metastases in the vertebræ, mesenteric glands, and ovary.

(4) The relatively small amount of shock and other disturbance which followed so severe an operation as complete evacuation of both orbits in so young a patient.

The history of our case is as follows:—

Lilian D., aged 3 years, was sent to the Royal Westminster Hospital on the 14th February, 1916, and was seen by Mr. Elmore W. Brewerton, who ordered her immediate admission into Hospital.

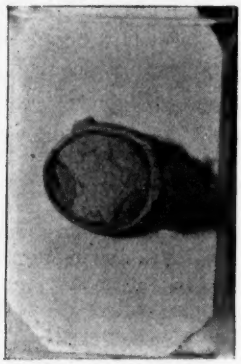

FIG. 1.
Section of Right Eye.

Something abnormal in the left eye was first noticed eighteen months previously, probably in September, 1914. No advice was sought till September, 1915, when she was taken to the Royal Surrey County Hospital at Guildford. The mother states that she was then refused treatment, on the ground that it was useless. The child had not been fretful, was fairly well nourished, and ate and slept well.

On admission, a fungating growth protruded between the lids of the left eye, keeping them separate; it had been fungating for three months. The mass was moist with a thin, semi-purulent discharge.

The right eye was much enlarged and apparently proptosed. The iris was fully dilated and stretched into a thin band at the limbus. The lens was in contact with the posterior aspect of the cornea, being pushed forward by a growth behind. The latter was of a

lemon-yellow colour, as seen by ordinary daylight, and also by oblique focal illumination. On ophthalmoscopic examination, no reflex was obtained.

As regards treatment, an operation was performed within an hour

FIG. 2.
Section of Left Eye.

of admission. The left orbit was exenterated. The lids were partly removed, and the wound stitched up, an aperture being left for packing.

The right eye was very freely excised. The conjunctiva was removed and the optic nerve was divided three-quarters of an

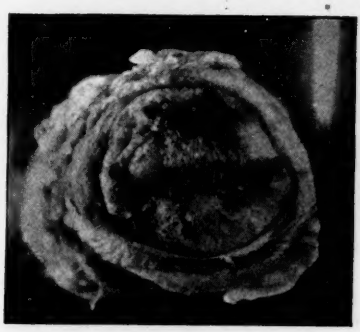

FIG. 3.
Recurrence from Right Socket.

inch behind the globe. The nerve was found to be involved, being surrounded by growth for half an inch behind the eye.

The right socket healed readily. The left socket became septic,

and the discharge had an unpleasant odour, but rapidly improved under irrigation with hydrogen peroxide and dressing with iodoform.

On the 11th March the child was discharged, there being as yet no sign of recurrence in either socket. While in Hospital, there was some bronchitis, which was recovered from, and at all times food was taken with avidity. The patient was re-admitted on the 30th March with a large recurrence, equal in size to half a tennis ball, protruding from the right orbit. The left orbit was completely covered with skin, but, with a little pressure, a solid mass could be felt in the socket. The same day the right orbit was thoroughly cleared out, the greater part of the lids being removed at the same time. By this time the child was thinner, and tended to be fretful. She took the anæsthetic very badly and stopped breathing, but artificial respiration was successfully carried out. A general anæsthetic was required subsequently for the first two dressings, and the same difficulty with respiration was experienced. After this, the child's condition improved, but a muco-purulent nasal catarrh developed, which persisted until death supervened about eight weeks later. The discharge was incessant, and before the end, caused much excoriation of the face. The head was noticed to be disproportionately large, and emaciation was very marked.

The right socket quickly filled up again and the growth in the left one infiltrated the skin and became fungating, and both orbits were again cleared out on May 1st. The greater part of the growths was found to consist of a material which had undergone pseudo-myxomatous degeneration.

After the final operation, the child quickly went downhill. She became quite apathetic, and neither ate nor slept. On the 3rd May she was found to have pneumonia of the left lung, but there were no rigors and no rise in temperature or in pulse. She cried a good deal, and her breathing was short and jerky, but there was little to indicate that she was suffering much pain. On the 6th of May the right lung showed signs of consolidation at the base, and death occurred on the evening of the 7th of May.

Pathological Report.

The tissues removed from the orbits presented the following characters:

Externally the right eye appeared normal except for a mass of new growth on the posterior aspect of the globe, embedded in which was the excised portion of the optic nerve. This mass was triangular in shape, being half an inch wide and half an inch from before backwards. On section, the coats of the eye appeared normal, but the anterior chamber was very shallow, the lens being pushed forward by a greyish-white growth which completely filled the vitreous chamber (Fig. 1).

The left eye was enlarged and filled by a soft mass of new growth, which was everywhere confined within the coats of the eye, except in front where the lens and structures in front of it were missing, and the growth projected forwards between the lids, the surface being ulcerated and excavated (Fig. 2). The posterior half of the neoplasm was of greyish-white colour, whilst the anterior half was of a dark brownish-red colour, as if infiltrated with blood. The structures of the eye, except the sclera, were entirely unrecognisable.

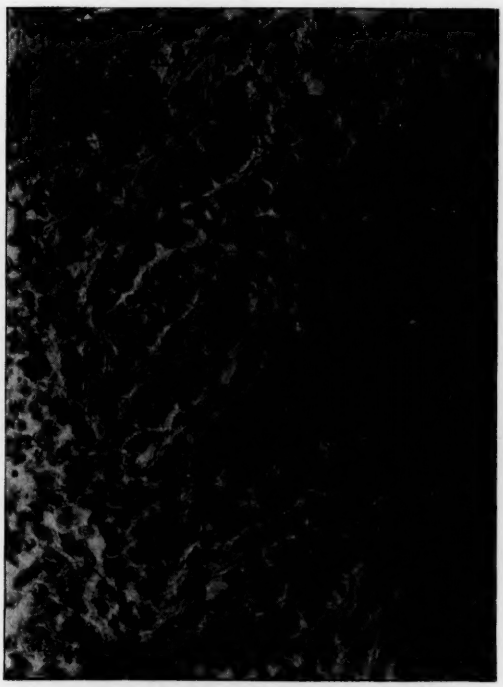

FIG. 4.

Section of Glioma of Eye, showing masses of more or less degenerated round cells (feebly staining). × 320.

Microscopically, the growths were composed of closely packed small round cells, with large deeply-staining nuclei, and extremely little surrounding cytoplasm. A few spindle cells were also present. Small syncytial masses, with multiple nuclei, forming the so-called giant-cells, were scattered irregularly through the mass in scanty numbers. The intercellular stroma was extremely small in amount, being almost unrecognisable. There was much hæmorrhagic

extravasation into the growth, although blood-vessels were few in number. Neuro-epithelial rosettes were not found in the sections.

The choroid and optic nerve in both eyes were infiltrated with growth, as was the left upper eyelid.

In the right eye the structures anterior to the posterior capsule of the lens were quite free from growth.

Post-Mortem Examination.

The body was that of an exceedingly emaciated female child, showing an extensive impetiginous rash on the face; both orbits, having been recently exenterated, showed gaping hollows, revealing the base of the sphenoid.

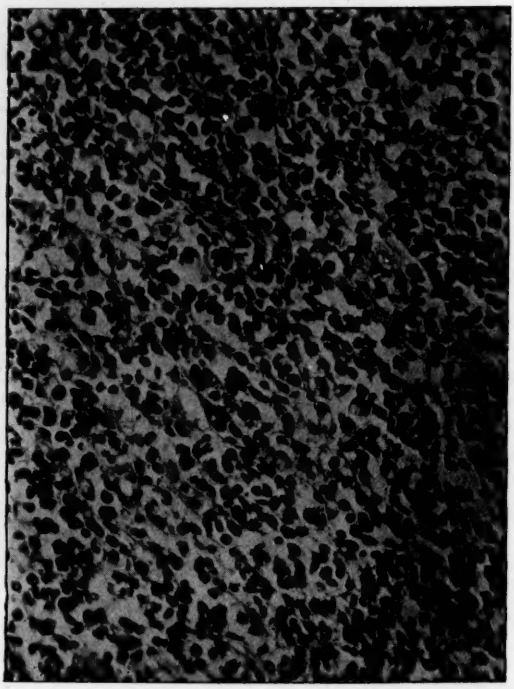

FIG. 5.

Section of secondary Tumour of Ovary, showing structure of round-celled Sarcoma. × 320.

Removal of the calvarium was difficult, on account of the bone being adherent to the dura mater. This was found to be due to many (about twenty) curious-looking growths, round in outline, some of

them discrete and some coalescing. They were about ¼ of an inch in thickness, bright-red in colour, like healthy granulations, and they varied from ¼ of an inch to 2 inches in diameter. The pia mater was hyperæmic in those areas, but apart from this, the convexity showed nothing abnormal. The brain weighed 2 lbs. 8 oz. At the base of the brain, in the position of the optic chiasma, and to some extent obscuring or replacing it, was a large mass of growth covered by pia mater.

The lungs both showed a condition of septic pneumonia. The mesenteric glands were enlarged, and the seat of metastases. In the centre of the right ovary there was a blood-clot, measuring five-sixteenths of an inch in diameter. This was surrounded by an area of new tissue forming a zone, three-sixteenths of an inch in thickness. The right Fallopian tube was normal, as were the left ovary and tube, and also the uterus and vagina. Protruding from the anterior aspect of the body of the second lumbar vertebra was an oval mass of growth, ¾ inch by ½ inch, and projecting about ⅜ inch above the surface of the bone.

The secondary growths in the meninges and in the ovary (Fig. 5) were examined microscopically, and presented the characters of a small round-celled sarcoma, no neuroglial elements being recognisable.

Our thanks are due to Mr. Elmore W. Brewerton for his kind permission to publish this case.

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3. **Radcliffe and Goldberg.**—*Archives of Ophthalmology*, 1907, Vol. XXXVI, p. 223.
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TRANSLATION.

Traumatic Rupture of the Ciliary Arteries. (Rupture traumatique des artères ciliaires.) By MARIE HUGUENIN. *La Clinique Ophtalmologique*, février, 1916, reproduced from *Revue Suisse de Médecine* (no date given).

The article by **Marie Huguenin**, of Berne, deals with a subject apparently not well known in this country. On that account it is proposed to make what practically amounts to a translation of parts of the article, in spite of the fact that it is already at second-hand, so to speak.

Siegrist, of Berne, in 1895 gave the first description of traumatic

rupture of the ciliary arteries and consecutive fundus alterations. He published four observations. Two cases have since been described by Birkhauser and three by Hirsch. Thus, with the two here described by Huguenin, eleven cases altogether are comprised. The authoress, after describing her own cases, summarises those of the other writers and then discusses the whole group. It is clear, however, that in order to obtain a complete grasp of the cases and of the opinions of their recorders, reference to the originals is necessary.

We shall here transcribe the major part of Huguenin's description of her own cases and of her disquisition on the group, but not the synopsis of the cases of other writers. It is but right to say that both these cases are from the public or private clinic of Siegrist.

Case 1.—M. W. H. on the 20th May, 1913, was struck by a stone on the left eye. Dr. Stern, of Thoune, saw the patient the same day, and recorded that the eyelids on the injured side were moderately swollen and red. In the middle of the left upper lid there was a little superficial excoriation of the skin. Slight conjunctival irritation. On the nasal side there was a large subconjunctival hæmorrhage. The cornea stained green with fluorescein in different parts of the nasal region. No perforating wound was to be seen. The anterior chamber was normal. No other pathological findings in the rest of the eyeball. On the 26th May, Dr. Stern first made a precise examination as to the vision. There was now no irritation of the eye. Cornea was normal. The iris looked normal. Pupil a little larger than that of the right side, and somewhat sluggish in reaction. The lens and vitreous were quite transparent, and tension was normal. Central vision was equivalent to fingers at 30 cms., with good projection. On examining the fundus, Dr. Stern found a normal disc with a physiological excavation. The remainder of the fundus was normal except in the region of the macula. The whole of the latter was included in a deep red spot. Subconjunctival injections of 4 per cent. sodium chloride were begun, and by June 18th vision had improved to counting fingers at 2½ metres. After this, Siegrist saw the patient. He found a characteristic round hole in the macula with several yellowish points in the centre. In the region of this hole the fundus was deep red, and presented a refraction different from the remainder. But what was most interesting was a map-like patch surrounding the macula and presenting a yellowish decolouration.* This patch was scattered over with pigment grains. The picture presented was exactly that of traumatic rupture of a ciliary artery, as described by Siegrist. The only difference lay in the presence of a macular hole,

* The French word is *décoloration*, which appears to mean either "discoloured," or "faded," "robbed of colour." The most literal translation is here adopted.—TRANSLATOR.

not hitherto observed in these cases. *Vision did not improve much* afterwards.

Case 2.—Lucie R., aged 16 years, came to the Berne eye clinic in January, 1914. In September, 1913, while walking in the street, she was struck on the right eye by a stone, thrown from a distance of 20 metres by her young brother. Immediately afterwards, the patient found that the vision was hazy, and the eyelids became red and swollen. The swelling soon disappeared, but an ecchymosis persisted for some time. The patient did not consult a doctor. When she was able to open the eyelids, the eye was neither red nor painful. There was no photophobia, but the vision remained hazy. There was slight improvement in the following weeks. Eventually, four months after the accident, she came to the Berne eye clinic. Her personal and family history was good. She had always had good sight prior to the accident. She was a strong well-developed girl. Examination of the internal organs revealed nothing worthy of remark. The cornea and anterior chamber seemed normal. The iris presented a slight radial tear in the upper part, starting from the pupil margin and involving only a portion of the iris. Pupil wide, reaction very slow and of small range. Media transparent. *Fundus examination*:—Disc well defined, a little pale at the temporal side. Vessels normal. On the temporal side of the disc and commencing at its border, there is a map-like patch 2 P.D. wide and running directly towards the macular region. This patch is well-defined and presents a yellowish decolouration. It is scattered over with fine grains of pigment. Perimetrically, slight restriction of the outer limits for white and colours. Considerable central scotoma for white and colours.

[At this point in the original paper we have a synopsis of the 4 cases reported previously by Siegrist, the 2 cases by Birkhauser, and the 3 cases by Hirsch. Then follows the "discussion" by the authoress, most of which we translate.]

These 11 cases have a similar ætiology. In all of them we have to do with a traumatism by a blunt object (stone, wood), not, as a rule, causing any laceration of the tissues, but merely contusion or slight excoriation. As a matter of fact, in 6 of the cases there was no wound at all, merely ecchymosis and swelling. In 1 case there was a small excoriation of the skin of the eyelids, while 4 cases only presented more or less severe wounds of the eyelids. The eyeball thus suffered very little externally. In all the cases there was ocular injection, usually of a mixed type, but very moderate in character and usually disappearing in a few days. In a few cases excoriations of the corneal epithelium occurred. Tear of the iris was seen in 2 cases and in 2 the iris was tremulous. In most cases the wounding object came from some distance away, and the trauma was of the upper lid.

In almost all the cases the pupil of the injured side was wide and motionless. In 1 case it was contracted. Pupil dilatation and immobility persisted for a long time, and sometimes did not completely disappear. In some cases there was blood in the anterior chamber, in the vitreous, and also discolouration of the iris. Pain has never been a pronounced feature, nor did it last long. The visual defect is immediate. In each case the patient, almost immediately after the injury, noticed pronounced diminution of vision in the injured eye. As a rule, the patient did not seek advice until some time after the accident, because at the beginning he or she did not realize the importance of the visual loss, and was impressed only by its long duration.

In the ten cases in which ophthalmoscopic examination was possible, the fundus lesions were identical, with small peculiarities in each individual case. The rapid appearance after the injury of irregular, map-like decolourized patches, with sharply defined contours, situated in the neighbourhood of the disc and usually starting from the edge of the latter, has been a feature in each one of these cases. In every case, as time went on, there occurred a blackish pigmentation of the decolourized patches. At the beginning the pigment appeared in the form of fine grains, but after some time, it became heaped up into more or less pronounced groupings, with a tendency to migrate towards the edges of the patch. Choroidal tear was seen in one case.

In two cases there was a hæmorrhage in the macula region, and in four cases striations in the form of a demi-corona around the macula. (The literal translation of *mi-couronne* would seem to be "half-crown," but this is clearly impossible in English!) In one case only there was a hole in the macula, and on this occasion the decolourized patch did not start from the papilla, but surrounded the macula.

In most cases there was no improvement in the vision with time. It remained stationary, or even in some cases deteriorated.

The authoress next refers to the experiments of Wagenmann in dividing a posterior ciliary vessel in the eye of the rabbit. After section of a long posterior ciliary artery, Wagenmann observed the following facts.—Half an hour after the operation, the appearance of a hazy patch in the fundus. This hazy patch disappears after two or three days, and in two or three weeks results in a yellowish decolouration and in a pigmentation which extends to the periphery of the fundus. It has thus been demonstrated by these experiments that as a result of section of a long ciliary artery, almost half the choroid becomes anæmic, and that after several days a part of this territory refills with blood. As a result of the temporary anæmia, there is a rapid degeneration of the retina with secondary pigmentation.

If the short posterior ciliary arteries are divided, the patch of fundus concerned starts from the superior or inferior border of the disc and extends towards the periphery. This is what happened in Wagenmann's experiments on the rabbit.

Huguenin continues.—In eight of our cases the altered patch starts from the lateral edge of the disc. In one of Birkhauser's cases the affected portion was at the superior disc edge.

According to Siegrist, one cannot deny that causes other than laceration of a ciliary artery can produce the ophthalmoscopic appearances above described, as, for instance, a choroidal or sub-choroidal hæmorrhage resulting from lesions of the choroidal vessels. Such hæmorrhages naturally influence the choroidal circulation and may produce secondary degeneration in the outer layers of the retina. Sudden flattening of the globe from before backwards by a blow from a blunt object may bring about these choroidal hæmorrhages. At any rate, the specific affection under consideration is due to circulatory trouble of the choroid.

ERNEST THOMSON.

ABSTRACTS.

I.—OPHTHALMIA NEONATORUM.

Thompson, George H.—Ophthalmia neonatorum. *Boston Medical and Surgical Journal*, May 25th, 1916.

This is an admirable review of ophthalmia neonatorum, with particular reference to its prevention in the United States, by **George H. Thompson,** of North Adams, Mass. It deserves to be read in the original.

Thompson espouses the view of those who attempt to explain the mildness of gonococcal ophthalmia in the infant as contrasted with its severity in the adult by supposing that the mother confers a strong degree of immunity upon the child. He does not agree with the other view (Theobald), according to which the mild disease in the infant is due to the fact that the infection has long lain dormant until roused into activity, whereas in the adult it occurs at the height of an attack of acute urethritis, when the infective powers of the micro-organism are presumably greatest. The author regards cases which occur before the second day after birth as due to intra-uterine infection, and those after the tenth day, to secondary infection. His views as to the pathogeny of corneal ulceration

differ from those commonly held, since he believes that the ulceration is usually caused by traumatism from the fingers, either of the infant or of the attendant. Hence (quite consistently), he advises, that in the treatment of the malady the baby's arms should be confined, so that he cannot reach his eyes, and in applying lotions, that the use of undines or of syringes be avoided. There is another reason for not employing syringes (not mentioned by the author), namely, the danger of infecting one's own eyes, of which unfortunate casualty the reviewer has witnessed a number of instances.

As regards treatment, silver nitrate is not used by Thompson, who depends upon 25 per cent. argyrol or 4 per cent. protargol. Despite the fact that some think lightly of its germicidal properties, Thompson has always been satisfied with argyrol in suppurative conditions about the eye. The eyes should be kept clean with boric lotion or normal saline. The slighter corneal complications are treated with hot fomentations, the local application of carbolic acid or of tincture of iodine, the operation of corneal section being reserved for the more serious cases. He does not believe in the application of either atropine or physostigmine.

He mentions a surprising fact reported by Derby, *viz.*, that in a series of cases reported from the Massachusetts Charitable Eye and Ear Infirmary 23 per cent. were unilateral. This is very different from the experience in this country, where most cases eventually become bilateral. Indeed, one English observer went so far as to assert that unilateral cases were never seen.

Comparing the results of cases treated in private and in hospital, according to Cheney, Thompson makes some interesting remarks.—Among 116 babies treated in the year 1909 at the Massachusetts Charitable Eye and Ear Infirmary only six became blind, and all of these were brought after ulceration was well established. On the other hand, in eight American cities, of sixty-one medical men, each of whom was confronted at least once during 1909 by a case of ophthalmia neonatorum, thirty-nine, or over 64 per cent., neither asked at any time for expert help, nor transferred the cases to hospital, but "invariably tried their inexpert hands at restraining the disease which they had failed to prevent." These physicians treated forty-four cases, and they failed to save the sight of nine babies. "For these physicians the best that can be said is, that they reaped the result of their own laxity in 20 per cent. of their eye cases; or, in other words, they failed to prevent blindness in every fifth case."

As showing the unwisdom of giving a definite prognosis, Thompson mentions a couple of cases, in one of which a corneal ulcer developed when discharge had practically ceased, and in the other where the baby, under similar circumstances as regards discharge, developed fatal meningitis.

Before discharging a case, Thompson takes two negative smears at intervals of forty-eight hours. He mentions the circumstance that gonococci have been found in the conjunctiva twenty-five days after the eyes were apparently well, and sixty days after the onset of the discharge.

Thompson whole-heartedly advocates the use of silver nitrate, 1 per cent., as a prophylactic, although he mistakenly states that those drops were those originally recommended by Credé. In point of fact, as well-known, the Leipzic professor employed and advocated 2 per cent. silver nitrate.

The American States have no standardized legislation for preventing infantile ophthalmia, and in some, indeed, no legislation dealing with the subject exists. Briefly, in 30 States babies' sore eyes must be reported to the Board of Health. In 11 States the health officers are required to secure medical attention for uncared-for cases. In 5 States a reporting law is printed on the birth certificate. In 4 States only are births reported early enough to be of assistance in the prevention of ophthalmia. In 9 States a question as to whether precautions have been taken against ophthalmia neonatorum is included in the birth certificate. In 12 States prophylactic outfits are distributed free to physicians and midwives. In 6 States the use of a prophylactic is compulsory. Finally, in 19 States popular educative literature is distributed by State Boards of Health. The city of Boston, which leads all others in preventive legislation, provides notification of birth within 48 hours, the use of preventives in all lying-in hospitals, free distribution of prophylactic, immediate reporting of cases of ophthalmia, the following-up of reported cases, and the authorization of Boards of Health to deal with such cases.

Thompson does not join in the hue and cry against midwives as the chief offenders in the causation of ophthalmia. He adduces evidence to show that the disease is actually more frequent in the cases where labour is attended by medical men. He thus reaches a view which the reviewer has voiced for several years past. There are few States where it is compulsory for the midwife to be registered. By the way, Thompson is not quite correct in stating that "in England midwives are compelled by law to use a prophylactic in every case; failure to do so revokes their licence." The truth is that the Central Midwives Board (the body which licenses the women) insists that in every birth certain simple precautions, such as cleansing the eyelids shall be taken, but it does not enjoin the employment of any chemical agent.

The author rightly lays stress upon the fact that the extra cost of educating a blind child approximates 3,000 dollars, and, further, that the estimated earnings of a blind individual are only one-half those of a sighted person. He concludes that the loss to the community of each person blinded from childhood must be about

13,000 dollars. As he points out, this amount would pay the salary of a capable woman for fourteen years, and he advocates the employment of such women, much in the same way as we employ "health visitors" here in England. S. S.

II.—DARK ADAPTATION AND SYMPATHETIC PARALYSIS.

Stargardt.—The dark adaptation of the eye in paralysis of the sympathetic. (Die Dunkeladaptation des Auges bei Sympathicuslähmung.) *Zeitschrift für Augenheilkunde*, March-April, 1915.

Stargardt, of Kiel, points out that, although it is fairly well established that the sympathetic nerve has no direct influence upon the act of sight, there have been no investigations to determine whether it can influence dark adaptation.

We know that when the sympathetic is paralysed, neither the visual acuity, colour vision, nor field is affected.

Dark adaptation is, according to the duplicity theory (which is generally accepted), a function of the rods, depending upon the accumulation of visual purple in these structures. Kühne's investigations lead us to suppose that the visual purple is not formed in the rods themselves, but in the pigmented epithelial cells. The process can be compared with glandular secretion, and is, indeed, a process of this nature.

If we accept the duplicity theory, we are further justified in asking whether the secretion of the purple is, like gland secretion, under the influence of the nervous system. We can at once grant the possibility of a nerve control of the secretion. The reflex act could travel along various paths.

Wilbrand and Sänger assume that dark adaptation is under the control of a centre in the external geniculate body. A critical examination of their reasons for this assumption, however, shows that they have failed to demonstrate such a centre.

Behr has tried to prove the existence of a centre which governs the secretion of the purple, but his conclusions are capable of other explanations.

In August, 1910, Stargardt carried out the following experiment. —The optic nerves of three rabbits were divided on one side. Eight days later the animals were exposed to direct sunlight for four hours, to bleach fully the visual purple. One rabbit was now placed in a dark room for seven minutes and then killed. The eyes were removed by red light, and bisected just behind the ciliary body.

The vitreous was removed, and the posterior segments of the eyes were placed in a 20 per cent. solution of potash-alum for twenty hours. It was now easy, after punching out the papilla, to remove the retina from the choroid. An examination in daylight showed that each retina was slightly pink, and that the colouration was equal in the two. Kühne has shown that in the rabbit, when the retina has been entirely freed from visual purple by exposure to sunlight, the first traces of this substance begin to appear after five minutes in the dark. It is therefore obvious that the regeneration took place at the normal rate in Stargardt's animals.

The other two rabbits were killed after being 35 minutes in the dark. The retina in each of these animals was coloured to the same degree, and the colouration was the maximum usual in the rabbit.

Kühne has shown that 30 to 38 minutes are necessary for full development of the visual purple in the rabbit. It is therefore obvious that division of the optic nerve has no influence upon the regeneration of the purple. It begins at the usual time, and reaches its maximum at the normal period.

These results agree with those obtained by others.

Langendorff found visual purple in the eye of a frog whose optic nerves had been divided six weeks before the examination.

Angelucci notes that the physiological reaction of the retina to light is not modified by the division of the optic nerves, for he found that the characteristic changes caused in the pigment cells by light could be demonstrated thirty days after the operation.

Holmgren found that the visual purple and the retinal stream were present in a rabbit whose optic nerves had been divided within the skull two years previously

Ayres, and Kühne confirmed Angelucci's results, and found that the section of the optic nerves had no influence whatever upon the secretion of the purple.

Engelmann denies that the generation of visual purple is dependent upon a central regulation. He showed that if one eye of a frog was strongly illuminated, the colouration of the retina which had not been exposed to light was as intensive as though the frog had been kept in the dark.

It is therefore certain that the generation of the visual purple is not influenced by the brain, at any rate not through nerves which are contained in the optic nerve.

If therefore dark adaptation depends upon the generation of visual purple, this purple of the eye cannot be influenced by a centre in the external geniculate body.

There are at present no clinical researches upon the condition of dark adaptation in cases of paralysis of the trigeminal nerve which will enable us to form an opinion regarding its influence upon dark adaptation. The question must for the present be left open.

We should expect that the sympathetic nerve might have some influence upon dark adaptation. It is of no moment whether this influence be exerted directly upon the pigment cells, or indirectly by the choroidal circulation.

The investigation should be made upon examples of pure paralysis of the sympathetic, uncomplicated by lesions of the eye or by defects in the body, as a whole. Such cases, however, are rare.

Stargardt has recently been able to examine a soldier whose left sympathetic had been divided by a Belgian bullet at Antwerp. The projectile was found embedded in the body of the fourth vertebra.

The examination showed that, when the allowance had been made for the unequal size of the pupils, there was no difference in the dark adaptation of the two eyes. The secretion of sweat was abolished on the left side, and had the nerve any influence upon the formation of the visual purple, it would have been noted in this case.

Ayres and Kühne have shown that stimulation of the sympathetic has no action on the regeneration of visual purple.

Our present knowledge points to the conclusion that dark adaptation and secretion of visual purple are processes which are independent of the brain and the nervous system, and that they are automatically carried out by the eye itself.

T. HARRISON BUTLER.

III.—VISUAL ACUITY AT A SHORT DISTANCE.

Landolt, E. — Visual acuity at a short distance. (L'acuité visuelle à courte distance.) *Archives d'Ophtalmologie*, juillet-août, 1916.

Landolt, of Paris, in the paper under notice, lays stress on the importance of the use of more accurate methods of recording near visual acuity.

He begins by defining the visual acuity for distance, as determined in the ordinary way, and terms this the "practical distant visual acuity." In this determination the possible effect of glasses in diminishing or increasing the size of the retinal images is neglected. The determination of the form perception of a given retina, *i.e.*, the least separation that two luminous points must have to be seen separately, which Landolt defines as the "physiological visual acuity," can be arrived at indirectly only by calculation of the effect of correcting glasses on the size of the images that fall on the retina. If we assume that the error of refraction is entirely due to differences in length, axial ametropia, the retinal images would be unaffected in size by correcting glasses at 13 mm. from the eye. On the other hand, if all the eyes were of the same length, the correcting glasses would have to be in contact with the cornea to leave the size of the

retinal images the same. As it is obviously impossible to determine, for any given eye, how much of the ametropia is due to length and how much to altered curvature, refractive power, and position of the crystalline, direct determination of the physiological visual acuity cannot be made. We do, however, know that the greater part of any ametropia is due, as a rule, to axial change, and may safely conclude that, with the exception of aphakic eyes, the influence of correcting glasses on the size of retinal images from distant sources may be neglected.

Landolt comes to the conclusion that our usual way of stating the visual acuity for those whose work is distant is sufficiently accurate. He next proceeds to point out that in near vision a different state of affairs has to be reckoned with. In order to secure adaptation for near work, one of three things must be done, either the accommodation must be employed, or a *plus* glass added, or a *minus* glass removed. The effect on the size of the retinal images differs with the method of accommodation used. Theoretically, it is possible to calculate the near from the distant visual acuity, but not so practically, as we are unable to measure the length and refractive power of an individual eye under the given conditions.

In order to test near visual acuity, Landolt has a series of optotypes calculated for the following visual acuities: V. 0.1; 0.15; 0.2; 0.3; 0.4; 0.5; 0.6; 0.7; 0.8; 1; 1.5; 2. If they are used at other distances than that for which they are marked, a calculation has to be made. If V is the visual acuity marked on the type for distance D, then v is the visual acuity for another distance d measured in metres.

$$\text{Then } v = \frac{Vd}{1/3} = 3Vd$$

Owing to the war, Landolt has not been able to have more than a few of his types made, but has found some interesting results from his experiments with them. Thus, he has found that in high myopes the visual acuity for near vision may be double that obtainable for distant vision. He is of the opinion that some practical value attaches to the results obtained in the calculation of compensation for injuries. E. E. H.

IV.—GLIOMA OF THE RETINA.

(1) **Reis.—Can the derivation of glioma of the retina from the pigment epithelium of the retina be considered as proved? (Kann die Abstammung des Netzhautglioms vom Pigmentepithel der Netzhaut als erwiesen gelten?)** *Zeitschrift für Augenheilkunde*, March-April, 1915.

(2) **Berrisford, Paul D.—Statistical notes on glioma retinæ with a report of 41 cases.** *Royal London Ophthalmic Hospital Reports*, Vol. XX, Part ii, March, 1916.

(1) Some time ago F. Deutschmann published a paper in which he sought to prove that glioma of the retina was derived from the cells of the retinal pigment layer (*Zeitschrift für Augenheilkunde*, Bd. XXVII, 1912).

Reis, of Bonn, now describes a case similar to the one which led Deutschmann to formulate his opinion. Reis has had the opportunity of examining Deutschmann's sections, and he has compared them with his own.

He concludes that there is no evidence for Deutschmann's view, which, indeed, is at variance with all that we know about the genesis of this form of tumour.

Reis points out that it is a universal rule that a tumour grows from its own cells and not from those of adjacent tissues.

Glioma develops from embryonic cells, and is potentially present at an early stage in the development of the eye.

The article is illustrated by some good micro-photographs.

T. HARRISON BUTLER.

(2) **Berrisford**, of St. Paul, Minn., U.S.A., continues the work on glioma retinæ, which has been done in the past by Messrs. Collins, Lawford, Marshall, and Owen.

During the last 42 years the ratio of glioma retinæ to other diseases at the Royal London Ophthalmic Hospital has been slightly more than 0.01 per cent. The 41 cases now under review support the opinion that glioma retinæ occurs more often in males than in females (males=22, females=17, sex not recorded in 2). The proportion of bilateral to unilateral cases was 1 to 7, which is below the usual figure. The tumour was observed at birth in 3 cases; within the first year in 9 cases; during the second year in 6 cases; during the third year in 3; during the fourth year in 4; during the fifth year in 3; and during the sixth year in 2. Nine cases out of the 41 may be considered as cured, 3 years having elapsed since enucleation. The importance of cutting the nerve far back is emphasized by the fact that in not one of the 9 recoveries had the growth invaded the optic nerve as far as its cut end. In one of the cases the glioma occurred in a shrunken eye; previous literature contains only 20 such cases. There are 2 previous instances only in literature where a child once affected with glioma has grown up and has had children who developed the same disease; the present series adds a third case of the kind.

R. H. ELLIOT.

V.—THE FREQUENCY OF LENS OPACITIES IN OLD PERSONS.

Barth, Theodor.—Researches upon the frequency and localisation of early opacities in the lens in 302 old persons over 60 years of age. (Untersuchungen über Häufigkeit und Lokalisation von beginnenden Linsentrübungen bei 302 über 60 Jahre alten Personen.) *Zeitschrift für Augenheilkunde, Band XXXII, S. 8 und 143.*

Barth, of Aarau, has examined a large number (302) of old persons in various institutions in Switzerland.

In every case the pupil was more or less fully dilated with homatropine and cocaine.

The eyes were examined by focal illumination, by transmitted light, and with the ophthalmoscope mirror, which had a + 8D. sph. lens behind it.

The numerical results were as follows:—

Lens extracted	1.32	per cent.
Ripe cataract	1.99	,,
Opacities visible by focal illumination	60.6	,,
Opacities seen only by transmitted light	9.6	,,
Opacities visible only with the magnifying glass	22.85	,,
Clear lenses	3.64	,,

The foregoing figures show that lens opacities are present in more than 96 per cent. of all individuals over 60 years old.

A comparison of the number of cases with lens opacities and the general state of the patients showed that cataract was not in any degree connected with any particular disease or condition. It depended solely upon the age of the person examined.

The position of the various forms of opacity is shown in another statistical table. It is noteworthy that 21 per cent. were found in the lower half of the lens with a preference for the nasal quadrant. In practically all cases the peripheral portion of the lens immediately under the anterior capsule was free from opacity. Generally, the type and position of the opacities was symmetrical in the two eyes.

The research shows that slight cataract is a physiological condition in the aged; it is a mistake to worry our aged patients by telling them that they have cataract when we discover these opacities.

The first portion of the paper is devoted to a review of the history of the subject, most of which is given up to the work of Förster.

T. HARRISON BUTLER.

VI.—INJURIES OF THE EYE, ETC., IN WAR.

(1) **Campos.—A case of keratitis bullosa from injury by asphyxiating bombs.** (Un cas de kératite bulleuse par bombes asphyxiantes.) *Ann. d'Oculistique*, décembre, 1915.

(2) **Weekers, L.—Astigmatics in the Army.** (Les astigmates à l'armée.) *Ann. d'Oculistique*, janvier, 1916.

(3) **Aubineau.—The value of the aphakic eye from a military point of view.** (Valeur de l'œil "aphake" au point de vue militaire.) *Ann. d'Oculistique*, février, 1916.

(4) **Cosmettatos, G. T.—Injuries of the eye from bullet wounds during war.** (Verletzungen der Augen durch Gewehrkugelschüsse während des Krieges.) *Archives für Augenheilkunde*, Bd. LXXVIII, S. 129.

(5) **Valude, E.—On inopportune operations.** (Des opérations inopportunes.) *Ann. d'Oculistique*, mars, 1916.

(6) **Rollet and Velter. — Operative indications in traumatic cataract incurred in war.** (Indications opératoires de la cataracte traumatique chez les blessés de guerre.) *La Clinique Ophtalmologique*, 10 juin, 1916.

(7) **Morax, V. and Moreau, F.—Protective masks for the eyeball.** (Masques protecteurs du globe oculaire.) *La Clinique Ophtalmologique*, 10 juin, 1916.

(8) **Magitot.—The repair of the eyelids and of the orbital cavity as applied to cicatrised war injuries.** (La réfaction des paupières et de la cavité orbitaire appliquée aux blessures de guerre cicatrisées.) *La Clinique Ophtalmologique*, 10 juin, 1916.

(9) **Moreau. — Early treatment of ocular and palpebral war wounds.** (Traitement précoce des plaies oculaires et palpébrales de guerre.) *La Clinique Ophtalmologique*, 10 juin, 1916.

(10) **Cosse.—The ocular prothesis.** (La prothèse oculaire.) *Ann. d'Oculistique*, juillet, 1916.

(11) **Lagrange, F.—A case of bilateral blindness from cerebral concussion, lasting for fifteen months, cured by a pretended operation.** (Un cas de cécité bilatérale par ébranlement cérébral, ayant duré quinze mois, guérie par un simulacre d'opération.) *Archives d'Ophtalmologie*, juillet-août, 1916.

(12) **Frenkel, Henri.—On a case of paramacular scotoma, with reduction of visual acuity, from wound of the occipital region.** (Sur un cas de scotome paramaculaire avec abaissement de l'acuité visuelle par blessure de la région occipitale.) *Archives d'Ophtalmologie*, juillet-août, 1916.

(13) **Bourdier, F.—Sclerectomy due to wound of war, with integrity of sight.** (Sclérectomie par blessure de guerre avec intégrité de la vision.) *Archives d'Ophtalmologie*, juillet-août, 1916.

(14) **Velter, E., and Perrin, R.—Two cases of intra-ocular foreign bodies visible with the ophthalmoscope.** (Deux cas de corps étrangers intra-oculaires visibles à l'ophtalmoscope.) *Archives d'Ophtalmologie*, juillet-août, 1916.

(15) **Jessop, Walter H.—Some of the ophthalmological lessons taught by the war.** (Quelques leçons ophtalmologiques de la guerre.) *Archives d'Ophtalmologie*, juillet-août, 1916.

(16) **Rollet and Velter.—Indications for operation on traumatic cataract amongst the wounded in war.** (Indications opératoires de la cataracte traumatique chez les blessés de guerre.) *Communication to the Ophthalmological Society of Paris*, July 11th, 1916.

(17) **Morax, V., and Moreau, F.—On the etiology of ocular wounds caused by war projectiles.** (Etiologie des blessures oculaires par projectiles de guerre.) *Ann. d'Oculistique*, août, 1916.

(18) **Fromaget and Bertemes, G.—Pseudo-conjunctivitis in fronto-ethmoidal sinusitis where factitious conjunctivitis is suspected.** (Les pseudo-conjonctivites dans les sinusites fronto-ethmoidales. A propos des conjonctivites suspectes.) *Ann. d'Oculistique*, août, 1916.

(19) **Aubineau.—On factitious conjunctivitis.** (A propos des conjonctivites provoquées.) *Ann. d'Oculistique*, août, 1916.

(20) **Petit, Paul.—Two cases of serious burns of the eye caused by liquid caustic (injury of war).** [Deux cas de brûlures oculaires graves par liquide caustique (blessure de guerre).] *Ann. d Oculistique*, novembre, 1916.

(21) **Harris, H. Elwin.—A case of a bullet in the sphenoidal sinuse; removal through the left nostril.** *Lancet*, 9th December, 1916.

(1) **Campos's** patient was wounded on May 13th, 1915. The diagnosis made at the front was burn of the second degree of the thigh and foot (asphyxiating bomb). When seen by the author on May 17th, he complained that he could not see. On examination, he was found to have central corneal opacities in both eyes, the periphery of the

cornea being more or less transparent. In addition, there was a bulla in the centre of the left cornea, formed of three pockets, which could be made to fuse into one by stroking with the upper lid. The tension of the left eye was definitely *minus*. Under treatment with an ointment consisting of boric acid and lanoline, without a bandage, both eyes recovered rapidly, and on May 21st, the man considered them cured, although the left cornea was not quite so clear as the right. This patient never had any pain in his eyes, which seems to show that the pain in keratitis bullosa is not due to stretching of the nerve-filaments by displacement of the epithelium.

R. J. COULTER.

(2) **Weekers,** of Liège, has found a considerable number of soldiers in the Belgian Army who have been more or less incapacitated, while on active service, by the breaking of the glasses which they wore to correct astigmatism. He has devised a method of supplying the large majority of these with sufficiently accurate spectacles from a stock consisting of 45 types of cylindrical and sphero-cylindrical lenses. The main points of the scheme, which is on the same lines as that at present in force in the British Army, are that the lenses are mounted in circular frames and only a limited number of strengths are supplied. He points out that a large number of men rejected on account of defective vision can be made available for service by supplying them with glasses according to his scheme. R. J. COULTER.

(3) **Aubineau**, referring to the controversy between Valude and Morax,* as to the advisability of operating on soldiers for monocular cataract, points out that, under the French regulations, an eye with cataract entails exclusion from active service, but an aphakic eye does not. Further, he considers that a successful cataract operation does not discharge the liability of the State, but diminishes it, since it reduces the prejudice caused to the wounded man. He is of opinion that monocular cataracts should be removed from soldiers, provided the fundamental conditions which govern all cataract operations are fulfilled. R. J. COULTER.

(4) Injuries to the eye from bullet wounds are seldom reported in times of peace. In war they are frequently seen, and are of especial interest because of the complicated lesions.

Cosmettatos, of Athens, during the Græco-Turkish and Græco-Bulgarian Wars, saw 43 cases out of 118 eye injuries. Of these, 16 were of the right, 24 of the left, and 3 of both eyes. In 5 cases the wounds were simple; that is, only a part of the eye was injured; in 17 cases, complicated; while in 21 there was complete destruction.

Among the slightly wounded cases, 2 were only of the lids,

* *Ann. d'Oculistique*, novembre, 1914.

2 others of the lids and lacrymal canal, and 2 of the lids and conjunctiva, and 1 of the cornea. These are described in detail.

Severe wounds were numerous. Some are described where the eye after severe injury remained intact. Three such cases are given in detail.

Injuries to the posterior parts of the eye were numerous. During their course the bullets had injured the choroid, retina, and the optic nerve through pressure on the posterior parts. Seven cases are described. Destruction of sight through bullet wound of the brain was seen in two cases.

He then reports the cases with complete destruction of the eye through bullet wounds, and arranges these cases in two classes : those without, and those with, fracture of the orbit—10 cases without fracture of the orbit and 11 cases with. In 3 of the latter the bullet entered the orbit and came out through another part of the head, and in 8 cases the bullet entered the head or face and came out through the wall of the orbit.

From this report it is seen that of 43 cases, 6 had only simple lesions, of which 5 were injuries of the lids, and 1 of the cornea. In 17 cases of complicated lesions of the eyes and adnexa, 2 had injury of lids and canaliculus, 1 of the cornea and iris, 2 of the sclera and iris, 3 of the vitreous, 1 of the choroid, 2 of the choroid and optic nerve, 1 of the retina, 2 of the optic nerve, 1 of the optic nerve and retina, 2 of visual centre, and, lastly, 21 with destruction of the eye.

The lesions of the conjunctiva and lids are described.

The vitreous hæmorrhages were caused by alteration in the inner membranes. During one and a half month's observation, these hæmorrhages were not absorbed. Of the 5 cases seen, 3 were double-sided, 2 single. The tears in the choroid had varying widths. Besides 2 cases of severance of the optic nerve, mentioned before, Cosmettatos saw other cases with injury of the nerve and atrophy. In these 2 cases there appeared simultaneous paralysis of the levator palpebræ of the upper lid. In another case, hyperæmia of the optic nerve was noted. Of the 2 cases of vision lost from brain injury, Cosmettatos states : in the first case he found a simultaneous left hemianopsia with pupil derangement ; in the second case there was a hyperæmia of the optic disc.

The cases with partial loss of vision were wounded in the following way :—

Cornea, 1 case ; choroid, 1 case ; optic nerve, 2 cases ; retina, 1 case ; brain, 2 cases.

The total loss of vision occurred in : wound of the cornea, 1 ; of the sclera, 2 ; hæmorrhage in vitreous, 3 ; wound of optic nerve, 3.

HANFORD MCKEE.

(5) **Valude,** of Paris, published an article in the *Annales d'Oculistique* for November, 1915, in which he maintained that

wounded soldiers suffering from traumatic cataract in one eye, the other eye being normal, should not have the cataract removed, as the operation could not improve their military value and might lead to loss of the eye and even to sympathetic inflammation.

He now reports a case in which the removal of a concussion cataract from a soldier, aged 23 years, was followed by irido-cyclitis and sympathetic ophthalmia, causing absolute blindness.

He also records a case in which an operation for squint was followed by unbearable diplopia, requiring a second operation to relieve it by putting the eyes perfectly straight, the ultimate result being that the man will probably be excused from military service for a long time, owing to the redness of the eyes caused by the operations.

He ends by urging that operations on soldiers for monocular cataract or strabismus are not advisable, as they do not confer any advantage on the patient from a military point of view.

R. J. COULTER.

(6) **Rollet and Velter,** of Lyons, have had a considerable war experience of traumatic cataract. They have seen 237 traumatic cataracts (123 operated) among a total of 24,990 eye patients.

Such cataracts are to be divided into two main groups.—(*a*) Those without wound of the eyeball; (*b*) those in which the eyeball is wounded. Of contusion cataracts (*a*) there were 40 out of the 237 cases. As a rule, the authors are of opinion that abstention from operation is preferable to intervention, and they give a number of considerations (state of the lens, tension, co-existence of other lesions, condition of the other eye) which have an influence on the decision to operate or not. Of the 40 cases, 14 were operated. Of cataracts accompanied by wound of the eyeball (*b*) there were 197 out of the 237. The treatment of these falls under two heads, namely, those with and those without an intra-ocular foreign body. Of these 197 cataracts with wound of the eye, 109 out of the 197 were operated. Of these 109 there were 89 without foreign body and 20 with foreign body. Of the 88 non-operated, 77 had no foreign body and 11 had this complication.

The authors then consider the various points influencing treatment under the following headings.—(*a*) Foreign body situated in the lens itself; (*b*) deeply situated in the eye; and, as regards those cases without foreign body, (*a*) the site of the wound, (*b*) the state of the lens, (*c*) the tension, (*d*) concomitant lesions, and (*e*) infection.

The following table shows the state of the second eye in the 123 operated cases, namely, 14 contusion cataracts and 109 cataracts complicated with wound:

Other eye normal	79 cases
„ „ cataractous	6 „
„ „ mild lesions	24 „
„ „ severe lesions with V.=0, or enucleated	14 „

There are various other statistical considerations and many hints on treatment, which may well be sought in the original interesting contribution to ophthalmic war literature. ERNEST THOMSON.

(7) **Morax and Moreau,** of Paris, have been considering the question of how best to protect the eyes in warfare.

They commence by enquiring statistically into the nature of the fragments by which eyes are injured. The statistics, however, are not here fully reproduced. Secondly, they consider the vulnerability of the eye through the orbital region, and the protection which would be offered by a simple curved mask with eye-holes. Thirdly, the authors discuss various kinds of screens for the direct protection of the eye, namely, the screen of armoured glass *(verre armé)* and that of perforated metal. Finally, the question of visibility through such screens is discussed by reference to photographs taken through them. Unfortunately such photographs are not reproduced, and, presumably, they would be difficult to reproduce in the printed page.

The authors conclude that there are four possible solutions, the relative value of which must be regarded from the practical and economic standpoint:

1. The use of a protective mask with simple unscreened eye holes (peri-ocular protection).

2. The use of discs of armoured glass placed in front of the cellophane discs in the *lunette* employed against lacrymatory gas (ocular protection).

3. The use of a mask with double screens of perforated metal (ocular and peri-ocular protection against small steel and copper projectiles).

4. The use of a mask with screens of armoured glass (ocular and peri-ocular protection against small steel and lead projectiles).

(The reviewer is uncertain as to the exact meaning of *verre armé*, which he has translated as "armoured glass.")

ERNEST THOMSON.

(9) So far as the reviewer can understand, **Moreau,** of Paris, is writing mainly for the benefit of military surgeons who are not professional oculists, as the following words taken from the author's conclusions indicate:—"To any surgeon who asks for my humble opinion, I would say: do not remove a severely wounded eye without having the opinion of an ophthalmologist, and, in dealing with a case of panophthalmitis, be content with an incision of the cornea with scissors or bistoury, followed by the use of the curette *(curette évacuateur)*. To this I may add the advice that where the conjunctiva is swollen and torn, the temptation to ablate the fragments of the sclera should be resisted."

The author also addresses ophthalmologists to the effect that in

wounds of the face the claims of cleanliness demand that they should not limit themselves to the eyeball, but should, as far as possible, undertake early treatment of wounds of the palpebral region.

Moreau concludes by hoping that the value of the early use of the electro-magnet may be realized (that is, presumably, by surgeons at the front who are not oculists); that, at the courses of instruction held at the front, conservative methods as applied to the eye should be discussed; and that an appliance for the protection of the eye should be worn by soldiers. (See also the article on this last subject, by Morax and Moreau, in the same number of this periodical, abstract No. 7 above.) ERNEST THOMSON.

(10) **Cosse,** who is in charge of the French Army Ophthalmic Centre at Chartres, has had great difficulty in getting artificial eyes for the soldiers under his care who have required enucleation, especially in cases in which the socket is contracted or deformed, owing to injuries to the eyelids or suppuration.

To overcome this, he takes a cast of the socket in the dentist's white paste, known as "Crown composition." This is softened in warm water and the cocainised socket is filled with it, massage being applied through the lids to force it into all the recesses. When the composition has become fixed, it is removed and trimmed. It is then replaced in the socket, and the position where the centre of the pupil should be situated is marked on it. The whole process can be carried out in two or three minutes. The author claims that by sending this cast, together with particulars as to the colour of the iris and conjunctiva and the size of the cornea and iris, to the artificial eye maker, a satisfactory prothesis can be obtained, even in very difficult cases. He further finds that if the cast is worn for a time, the size of the socket increases, so he lets his patients wear the first cast for several days and takes a second one before he orders the prothesis. In several cases of contracted socket he has been able to get sufficient enlargement to allow a prothesis to be worn by getting the patient to wear casts of increasing size.

He claims that his method is easy and cheap, that it enables a prothesis to be obtained for abnormal cases, and has therapeutic value in restoring a contracted *cul-de-sac* in certain cases.

R. J. COULTER.

(11) **Lagrange**, of Bordeaux, presents an interesting report upon the case of a soldier who had remained completely blind of both eyes since a bomb explosion upwards of a year before. He lost consciousness for about half an hour after the explosion, but sustained no injuries except a graze of the face and a bruise of one shoulder. Beyond loss of sight, nothing could be found amiss with his eyes. The diagnosis was obscure, and so it was solemnly proposed to the patient that a big operation should be undertaken,

no less a thing indeed than "tying the optic nerves to the brain by means of silver wire." Chloroform was given, and before consciousness was wholly lost, the thermo-cautery was brought close to the eyes, but the man did not shrink from the glowing wire. When anæsthesia was complete, the eyes were washed with an irritating fluid, and a bandage was applied. On coming to himself, the man was told that the operation had been perfectly successful, and that more or less sight would be regained in about a fortnight's time. Three days after this pantomime, the bandage being removed with great care amid the impressive surroundings of the operating theatre, the patient saw the hand at 50 cm., and could distinguish, although not count, the officer's stripes. A couple of days later, he read the large characters of a catalogue. To shorten the story, sight continued to improve day by day, until about a fortnight after the "operation," it had reached 7/10, while the visual field and chromatic sense were normal.

Discussing the case, Lagrange, on the whole, concludes that the blindness was simulated, in order to avoid the fatigues and dangers of war. He inclines to reject the view that it was an instance of monosymptomatic hysteria. S. S.

(12) This communication by **Frenkel,** of Bordeaux, centres around the case of a soldier, 22 years of age, who was wounded in the occipital region by a fragment of shell. He was unconscious for six hours, and when he came to himself, was found to be blind. The blindness, after persisting for seven or eight days, then improved somewhat. The man was trephined a couple of months after the injury, and the operation was followed by improvement in the general health but not in the sight.

When he was examined by Frenkel some sixteen months after the original injury, the pupil of the right eye was a little (1 mm.) larger than that of the left. The pupillary reactions were normal, and could be elicited no matter on what part of the retina the light was thrown. The optic discs showed no departure from normal. V.=0·1 and No. 7 Wecker. In order to obtain this sight, the patient inclined the head towards the left in reading with the right eye, and *vice versâ*. There was slight concentric contraction of the field as regards blue, red, and green. There was a scotoma of hemianopic type lying immediately below each fixation point, larger in the case of the left than of the right field. The results of examination with the Rémy diploscope and the Förster photometer are given.

In the light afforded by the foregoing case, Frenkel sets himself to answer certain questions.—1. ***What was the true visual acuity possessed by the patient?*** With the diploscope, an acuity of about 1/15 was obtained, but this discrepancy is probably to be explained by the limitation of the visual field brought about by the holes of

the appliance. In order to obtain V.=0·1 by the ordinary types the man was compelled to employ the supra-macular portion of each retina, and the attitude of head necessary to accomplish this could not be assumed on account of the holes in the diploscope. 2. *What were the anatomical causes of the visual disturbances?* These were obviously due to changes in the cortical centres of vision consequent upon a lesion of the occipital lobe. From experiments upon monkeys, H. Munk distinguished between a cortical zone for the macula, and a much more extended zone for peripheral vision. In point of fact, the question of the cortical field of macula is not yet settled. Some believe that the cortical elements representing the macula are widely disseminated (Monakow, Bernheimer); others that the macula is localised in the hindermost part of the calcarine fissure; while Henschen places it in the region of the cuneus. 3. *Is the infirmity irremediable?* Since some thirteen months have passed since the man was trephined, and the sight has remained stationary, the condition must now be considered as definitive. 4. *What is the degree of functional loss, and its probable duration?* Frenkel estimates the functional loss at 90 per cent., and regards it as irremediable.

S. S.

(13) This case of shell wound of the eye is placed upon record by **Bourdier** on account of the likeness to the wound made in the sclerectomy of F. Fergus. Essential facts follow:

A soldier was wounded in the right eye and other parts of the body by fragments of shell and of wood. When examined twelve days after the injury, the right eye presented no inflammatory signs. V.=0·4. At 4 mm. above the limbus, in the median line, was a perforation, of which the diameter was about 2 mm. There was no protusion, but the uvea appeared in the aperture. Vitreous somewhat cloudy, and retina detached in the lower segment, opposite the perforation. No foreign body. A large iridectomy was performed, and the wound in the sclera covered with conjunctiva. V. twenty days later=1.

S. S.

(14) **Velter** and **Perrin** report a couple of cases where eyes had been wounded by flying fragments of projectiles. When seen, six months and one year respectively after the injury, the eyes were free from inflammatory reaction, the media were clear, tension was normal, and vision was in one instance perception of light and in the other 2/3. Foreign bodies could be seen with the ophthalmoscope in the fundus of each patient. In one case the foreign body had passed through the lower eyelid, penetrated the eyeball in its lower segment, and come to rest in the deep membranes above the macula, while in the other it had passed into the globe through the cornea.

No attempt was made in either instance to remove the foreign substance.

S. S.

(15) This is the address delivered by **Jessop**, of London, on May 4th last, in his capacity of president of the Ophthalmological Society of the United Kingdom.

The rarity of sympathetic ophthalmitis during the present war he traces to skill in diagnosis, and especially to the early removal of seriously injured eyes.

Another subject that engages his attention is papillœdema following bullet wounds of the skull. The condition occurs in about 60 per cent. of the cases where the vault of the skull is fractured. The ophthalmoscopic signs are usually slight. Their presence always implies an increased intracranial pressure, on the relief of which they quickly disappear, generally without leaving any traces behind them.

Finally, Jessop considers the retinitis of trench nephritis. Accompanying the œdema, dyspnœa, albuminuria, vomiting, headache, and other symptoms of that somewhat mysterious malady, he has found ophthalmoscopic evidences of retinal œdema in 46·6 per cent. of forty-five cases critically examined; but as the condition is ephemeral, he considers that the percentage is probably much higher than stated. Pathological lesions of the retinal vessels were not observed. In three of the cases, œdema of the retina was accompanied by other ophthalmoscopic lesions. Thus, in one patient there were flame-shaped retinal hæmorrhages; in another, an early retinitis with *plaques*; and in a third, the signs ordinarily described as those characteristic of albuminuric retinitis. As regards the last patient, a man, aged 27 years, the retinal affection ended in resolution within something less than four months from the beginning of the general symptoms. It is regarded by Jessop as an instance of acute nephritis. Incidentally, he mentions two cases of detachment of the retina, due to solid, or almost solid, œdema, in which, after manifesting brilliant white *plaques* and hæmorrhages, the condition got well. S. S.

(16) The French ophthalmic journals have recently devoted considerable space (*see* No. 6 above) to the subject dealt with by **Rollet** and **Velter**, of Lyons. While we are unable to see that the course of treatment differs or should differ in the soldier from that proper to the civilian, the extensive experience (237 traumatic cataracts with 123 operations) of the authors while in charge of the Ophthalmological Centre of the XIVth region, renders anything they may have to say on the subject worthy of consideration. Unfortunately the authors, in the communication under review, state that, in spite of the interest of the military value of the soldiers treated by them, they do not intend at present to deal with that part of the subject. Possibly, they may be willing to do so at a later date.

They divide traumatic cataracts first into two main groups:—

1. Those without wound of the eye. 2. Those with a wound of the eye.

In the first group, the contusion cataracts, they consider that, it is better to avoid operation in the majority of cases. The most important symptoms to guide us in deciding the question for or against operation are:

1. *The state of the lens.*—Contusion cataracts are frequently incomplete, the opacity being rarely nuclear, but usually anterior or posterior capsular. As its situation is often excentric, a certain amount of vision is often present, which, if not good, is at any rate of some service. Operation should be reserved for those cases in which the opacity is complete. Operation should always be performed when the lens is dislocated into the anterior or posterior chamber. We regret that the authors give no details of the operative procedures they advise in the case of dislocated lenses.

2. *The state of the intra-ocular tension.*—Hypotony is an absolute contra-indication to operation, even if the cataract is complete, since it often indicates a latent iridocyclitis which is liable to be stirred up by any operative interference. In the opposite case of raised tension operation may be necessary, but in many cases, especially if spontaneous absorption is taking place, the tension will yield to the use of miotics. The risks of producing adhesions in cases with a swelling lens, seem to us to outweigh any possible advantage in their use, nor do we think they would be of much use unless the rise of tension was but little.

3. *The co-existence of other ocular lesions, such as iridodialysis, vitreous or retinal hæmorrhages; retinal detachments or choroidal ruptures.*—As there is no hurry, it is well to wait in such cases and see if spontaneous absorption may take place.

4. *The state of the other eye must be taken into account.*—If that has been lost, or its visual acuity is very low, operation is certainly indicated, all the more so as the post-operative anisometropia, troublesome if the fellow eye is sound, will not have to be taken into account.

The authors had 40 of these contusion cataracts to treat and operated on 14; the remaining 26 were not operated on either because the cataract was accompanied by other severe ocular lesions or was only partial.

The second class of case, in which there is a wound of the eye, is divided into two main groups, according to the presence or absence of an intra-ocular foreign body.

1. Traumatic cataracts with an intra-ocular foreign body. The first indication, according to the authors, is to submit the patient to the action of the magnet in the hope of dragging the foreign body round the lens if it should prove magnetic. Nothing is said about accurate localisation by radiography, which should surely be the first

step, even if the somewhat rough method of attempting to drag the foreign body forward is adopted.

The situation of the foreign body is noted as of importance. It is stated that the diagnosis of a foreign body situated in the lens is always difficult and only to be made by radiography, a statement surely applicable to all intra-ocular foreign bodies. As a foreign body in this situation is frequently very small and firmly fixed in the lental substance, extraction by the magnet is often unsuccessful. In such cases it is advisable to wait until the cataract is complete, and then to remove the lens matter and the foreign body at the same time. The known tolerance of the lens for a small foreign body, and the rarity of infection in such cases, support this course of action.

When, on the other hand, the foreign body is in the deeper parts of the eye, a magnet operation must be undertaken at once. Should this prove successful, and the inflammatory symptoms subside, the extraction of the cataract may follow at the most suitable period. During the extraction of the foreign body some of the soft lens matter will probably be removed and the remainder may then be left to be absorbed. If, on the other hand, the removal of the foreign body is not successfully accomplished, one of three results follows.—The eye is lost as a result of inflammatory changes of a rapid nature, which as an exceptional rarity, may lead to sympathetic ophthalmia; organisation of the vitreous takes place round the foreign body and light perception is gradually lost without any inflammatory change of an active nature; or, finally, the eye may quiet without loss of vision and an attempt may be made to extract the cataract after a sufficient interval has elapsed. The authors removed the cataract in 12 cases in which they had failed to remove the foreign body, and succeeded in one case in obtaining vision better than 1/4, in 3 cases between 1/4 and 1/20, and in the remaining 8 less than 1/20. On the other hand, in 6 cases in which the removal of the foreign body had been successful, 2 had vision better than 1/4, 2 between 1/4 and 1/20, and 2 worse than 1/20.

The greater number of cases had no foreign body present (166 as against 31 with foreign bodies). In these cases the indications for operation depend on the seat of the injury, the state of the lens, the intra-ocular tension, and the accompanying injuries of the globe, with special reference to the presence of infection.

In the majority of cases the injury will be found in the anterior segment of the eye and may consist of a small opening which has rapidly closed with a small inclusion of iris. This latter, it is suggested, may be cauterised; a method of treatment which has proved disastrous in civilian practice and which we consider should never be attempted. When the wound is large and prevented from

closing by lens matter and prolapsed iris, immediate operation is necessary to free the iris and to remove the lens matter. The cases are usually not seen soon enough after the injury to render suture or conjunctival flap grafting of much use. As regards the condition of the lens and the intra-ocular tension, the procedure recommended does not differ from that adopted in the case of contusion cataracts. Accompanying lesions are of importance in so far as they affect the results that may be expected from successful operation; it is obviously useless to operate on an eye in which the perception of light is lost.

No eye should be operated on that shows signs of a quiet iridocyclitis, especially if the tension is subnormal, until a considerable period has elapsed.

166 cases of cataract with wound of the eye were dealt with. Of these, 89 were submitted to operation with the following results:— Vision 1/4 and better, 12 cases; vision 1/4 to 1/20, 36 cases; vision 1/20 to 1/50, 18 cases; vision less than 1/50, 23 cases. No cases of post-operative infection were observed.

As regards the operative methods adopted, the authors have little to say. They advise a small corneal incision and the use of capsule forceps. E. E. H.

(17) **Morax** and **Moreau,** of Paris, have made a statistical investigation into the nature and mode of action of the projectiles which injure the visual apparatus, with a view to devising means for its protection.

The statistics are founded on 698 cases which were all examined at the Lariboisière Hospital under similar conditions. The wounds were caused as follows:—

By shells	341
By rifle or machine gun bullets ...	191
By grenades	82
By bombs, petards, aereal torpedoes, etc.	63
By Shrapnel bullets	20
By cold steel	1

These various bodies may injure the visual apparatus in five ways, *i.e.*, by contusion, direct or indirect; by rupture of the ocular membranes, with or without penetration; by infection of the globe; by section of the optic nerve; and by intra-cranial lesion of the optic paths. Lesions by direct contusion are choroido-retinal ruptures, hæmorrhages, and œdema, and are important from their frequence, and because they usually cause permanent functional damage. They may be caused by quite small fragments of shells, grenades, or bombs, or even by earth or stone thrown up by the explosion of a shell or grenade. Lesions by indirect contusion cause tears in the iris, traumatic cataract, retinal hæmorrhages, and

zones of depigmentation, usually called "ruptures" of the choroid, although it is probable that a rupture is not always present. Lesions by rupture of the membranes usually give rise to complete loss of the eye, but small bodies may penetrate the eye and remain in it, causing variable amounts of damage without total loss of vision. Infection occurs when a small body penetrates the eye without at once destroying the sight. The infecting organism may be an earth germ (*B. perfringens*, etc.,) but more commonly it is carried in from the conjunctival sac (pneumococcus). Lesions of the optic nerve or motor nerves are rare in comparison with lesions of the globe itself. Intra-cranial lesions are not of importance for the purpose of the author's investigation, as the *casques* in use provide protection against them.

For the purpose of investigating the nature of the injuries caused by the different varieties of projectiles, the authors have made an arbitrary division of the latter into three classes—1. *Small*, weighing less than 0.25 to 0.30 grammes. 2. *Medium*, weighing 0.30 to 5.00 grammes, and 3. *Large*, weighing more than 5 grammes. The last class includes shrapnel and rifle bullets, which weigh from 8 to 10 grammes. Bodies belonging to this class usually traverse both the walls of the eyeball and, in addition, wound the eyelids and pass through some of the thin bones surrounding the orbital cavity. In cases in which lesions of this grade have been produced, but the wounding body has not been found, the authors have inferred its size from the injuries caused by it. Medium fragments frequently cause double perforation of the eyeball, but do not usually pass through the walls of the orbit. They may cause concussion injuries. Small fragments rarely penetrate deeply into the orbit, but may pierce the lid and sclerotic and become lodged in the globe, but once there have not sufficient force to pierce its second wall.

A further category of injuries is caused by a multitude of tiny metallic fragments forming a regular metallic dust which tattoos the skin of the face, the cornea, and the conjunctiva and may even penetrate to the iris or lens. The 341 cases of injuries from fragments of shells were divided as follows among these three classes: —Large, 75; Medium, 96; Small, 170. Of 82 grenade wounds, 57 were caused by small fragments, and 25 by large or medium, and of 63 injuries by trench projectiles 38 were caused by small fragments, and 25 by large or medium ones, or, adding the lot together, of 486 injuries, 265=54 per cent., were caused by small fragments. Injuries by rifle or shrapnel bullets.—These numbered 211 (191 rifle and 20 shrapnel). In most case they caused destructive orbital-palpebral-ocular lesions, but 55 of them (42 rifle bullets, 7 fragments of rifle bullets and 68 shrapnel bullets) caused ocular contusions. In 38 of the 191 cases of injury by rifle balls, the

projectiles were split into small masses or even dust, tattooing the lids and cornea, and giving rise to minute penetrating wounds with traumatic cataract, etc.

The functional results of the injuries were as follows:—

Homonymous hemianopsia from cranial traumatism	14	cases
Enucleations	293	„
Vision lost or less than 1/20	194	„
Vision between 1/10 and 1/20	36	„
Useful vision retained or regained	160	„

As the result of their investigation, the authors consider that, although no practicable protective apparatus could be of use in stopping bullets or large splinters of shell, almost half the ocular injuries in war are caused by small bodies, which could be stopped by some sort of gauze shield, which might also stop spent or almost spent fragments of medium size. Unfortunately, such an apparatus would more or less diminish the visual acuity of the soldier wearing it, but a shade could be worn protecting the temporo-orbito-nasal region and perforated by an opening a little larger than the cornea, which would reduce the vulnerable zone by about three-quarters.

R. J. COULTER.

(18) **Fromaget** and **Bertemes,** who have charge respectively of the ophthalmic and oto-rhino-laryngological departments of the French Army Hospital at Boulogne-sur-Mer, describe a form of unilateral pseudo-conjunctivitis depending on homolateral frontal sinusitis. They give histories of three cases which they have observed in soldiers sent for examination, owing to suspicious conjunctivitis, and of one case which occurred in civil practice.

The disease is characterised by vivid redness of the entire palpebral and bulbar conjunctiva, which at first sight resembles that of acute conjunctivitis, but on examination with a *loupe*, is seen to be due to the presence of vessels. This is accompanied by slight lacrymation, but there is very little secretion and no gummy lids or redness or excoriation of the skin. There is no pain and no sign of disease in any other part of the eye or orbit. The attacks come on suddenly at intervals and, after lasting for periods which vary from 7 to 15 days, disappear spontaneously in from 24 to 48 hours. They are uninfluenced by the usual treatments.

These conditions were found to be associated with slight chronic frontal sinusitis, characterised by tenderness on the affected side on the deep pressure on the angle where the inner and superior walls of orbit join, and by slight oozing of pus inside the external lip of the middle meatus. This latter may not be present at the first examination and may only become apparent after the fronto-nasal canal becomes freed spontaneously or by treatment. The authors consider that these cases are very similar in ætiology to the cases of iritis or false

iritis which accompany maxillary sinusitis, and are due to infection, probably through the venous anastomoses, and not to reflex action. For treatment they recommend inhalation of menthol with occasional applications of cocain and adrenalin. As the frontal disease is of a very mild type, operation is not usually necessary. R. J. COULTER.

(19) **Aubineau** has had many soldiers from the Moroccan Division of the French Army sent to the ophthalmic centre of which he is in charge with the diagnosis of "artificial conjunctivitis." Most of these were suffering from ordinary acute, or subacute, bilateral conjunctivitis in eyes, predisposed to the condition from old chronic conjunctivitis, or trachoma, and yielded readily to treatment with sulphate of zinc, or silver salts, so that he has not been able to confirm the diagnosis. He considers that these attacks were started by unintentional inoculation of the conjunctiva with dirty fingers, or by the accidental introduction of dust into the conjunctival sac. He admits that this may have been done deliberately, but is of opinion that malingerers usually choose some painless method, which does not involve serious consequences, and that disappearance of the inflammation spontaneously, or under bandaging, is the rule. Although the introduction of dust into the conjunctiva, which has been the seat of old disease, may set up a true conjunctivitis, the author considers that in the presence of an acute or subacute conjunctivitis without special features, nothing justifies an ophthalmologist in inferring retrospective ætiological conditions as to its artificial or traumatic character. He regards unilaterality as suspicious, but not conclusive unless special objective signs are present, such as those associated with ipecacuanha conjunctivitis, *viz.*: absence of secretion, eczematous condition of the lid margins, lardaceous tint, and localisation of the lesions in the lower palpebral conjunctiva. Finally, he records the case of a soldier sent to him as a malingerer with ipecacuanha conjunctivitis, who was in reality suffering from spring catarrh with conjunctival scarring and a fresh porcelain-looking opacity of the left cornea. The latter Aubineau attributed to injudicious treatment with nitrate of silver and yellow oxide of mercury simultaneously. R. J. COULTER.

(20) **Petit**, of Caen, describes a couple of cases in which the eye and eyelids were seriously injured by some liquid caustic, which he supposes to be analogous in nature to phosphoric acid. Both men were wounded by a bursting shell, which probably contained some liquid intended to generate asphyxiating vapours, and the contained liquid was thought to be the agent whereby the eyes were damaged. In each patient one cornea ruptured, and the eye had to be enucleated. He has not so far seen a similar case, although his experience of wounded soldiers has been large. S. S.

(21) **Harris**, reports and illustrates with skiagrams a most interesting case in which a bullet appears to have entered by the left

inner canthus, and to have passed along between the eyeball and the inner wall of the orbit, until it reached the apex of that cavity. Here, turning downwards, inwards, and forwards, it described an angle of more than 180 degrees, and entered the sphenoidal sinus, wounding in its course the third and optic nerves. Clinically, the conditions found when the patient reached the Beaufort War Hospital Bristol, were "paralysis of the eyelids" (presumably ptosis is meant) and left optic atrophy. The ingenious and ultimately successful method adopted by Harris to remove the bullet may be read in the original. Visual details are not given.

ERNEST THOMSON.

BOOK NOTICES.

Quotations, Notes and Illustrations to supplement a Lecture on Curiosities and Defects of Sight. Delivered to Working Men and Women at the British Association Meeting, Manchester, 1915. By W. STIRLING.

Dr. Stirling, the well-known Professor of Physiology at Manchester University, has taken much trouble in collecting numerous quotations from literature bearing on the activities of the human eye. He has also collected a great many illustrations bearing on the same subject, ranging from a portrait of Descartes with a cutting from the *Tractatus de Homine* to illustrate his views on the pineal gland and the relation of the eye to the soul, to specimens of photography with the compound eye of an insect. Various optical illusions are figured and elementary anatomy of the eye together with some account of its functions is included.

The pamphlet should serve to interest and attract the readers to whom it is addressed. E. E. H.

Manchester Royal Eye Hospital. Centenary Report, 1815 to 1915.

The authorities of the Manchester Eye Hospital are to be congratulated on the progress shown by the Institution in its hundred years of activity. During the first year it treated 1885 patients and enjoyed an income of £202 19s. 11d., and in its last year it treated 39,116 patients with an income of £6,407 10s. 1d.

Forty-six pages of the report are occupied by the details of the 306 cataract operations performed in the last twelve months. The operation usually performed was the combined extraction, the section being purely corneal and a conjunctival flap made only in 121 cases. Loss of vitreous occurred in 21 cases. Vision between 6/60 and 6/6 was obtained in 265 cases and thirteen eyes were lost, four of these being due to suppuration.

The work of the refraction department was very heavy, as glasses were ordered in no fewer than 15,997 cases.

Twenty beds are reserved for military cases. E. E. H.

Glare and the Student's Life. By JAMES KERR. London: Adlard & Son and West Newman, Bartholomew Close, E.C. 1916.

This reprint of an article from *School Hygiene*, February, 1916, embodies Dr. James Kerr's views upon the deleterious influence of glare upon children's eyesight.

For the mass of students, as he remarks, glare "is more important than abnormal refraction or the provision of spectacles." After explaining what is meant by "glare" and how it comes about, he points out that the eye-strain due to its influence becomes increasingly obtrusive after the twelfth year; is especially insistent in reading, writing, and figuring; and is particularly distressing under artificial illumination. He urges as an absolute rule that "*no naked filament, mantle or flame should be permitted, nor any source of light with greater intrinsic brilliancy than three foot candles per square inch.*" The black board, as a source of glare, comes in for attention, and it is shown how reflections from its surface may be avoided, as by proper position, tilting, and correct illumination. The influence of paper in producing glare is explained. Finally, Dr. Kerr discusses the tests for glare, and after mentioning those devised by Ingersoll and Trotter respectively, remarks that a simple method of fixing definite measurements of glare is required. Excessive or misdirected light and other external factors of glare should be capable of local control, but are "now being overlooked and neglected in this country," while the ocular factors of glare, as nutritional conditions, fatigue, and over-work, "are being neglected for the provision of glasses." S. S.

The Effect of Industrial Conditions upon Eyesight. Health of Munition Workers' Committee, Memorandum No. 15. London: Harrison & Sons, 1916.

The work of this committee of scientific men, on questions of industrial fatigue, hours of labour, and other matters affecting the personal health and physical efficiency of workers in munition factories and workshops, is of great and lasting value.

The total amount of time, and consequently output, sacrificed by trivial accidents, frequently preventable, and often inadequately treated, is a very serious one. Thus, to quote but one district, the Birmingham Eye and Coventry Hospitals calculate that from 500 to

700 days' work are lost annually from eye accidents, the majority of which are trivial, and consist of impacted foreign bodies.

Naturally, there is a great increase of such accidents at the present time, due partly to the increase in the number of workers, and partly to their inexperience of metal and engineering works. Lathe work and grinding are the chief sources of these minor injuries.

The Committee does not consider that the effects of intense heat, etc., such as glass-blowers' cataract, call for consideration in the present Memorandum, since the effects take too long to manifest themselves.

Suggestions for the prevention of accidents, with a diagram of two forms of inexpensive and efficient protective goggles, are added.

The Committee state that, to be effective, an eyeguard:

(a) Should prevent particles reaching the eyes from in front, from either side, or from below. Practically nothing enters from above.

(b) Should be light and comfortable, and allow free play of air, so that moisture does not condense on the transparent medium.

(c) Should not impede vision, or become obscured by the impact of particles.

(d) Should be strong and cheap.

Unfortunately, there is considerable objection on the part of the workers to wear goggles. Glass is advised, and it is pointed out that injury from the broken glass is very rare. Glass of sufficient strength to turn a shot pellet, such as is used for shooting spectacles, should be employed.

Instructions as to treatment are as follows.—"First aid treatment is all that can be rendered effectively in the factory; but as the subsequent history of the case depends so largely on the way in which first aid is applied, every precaution should be taken to avoid increasing the injury by well-meant but misdirected efforts to give relief. Many factories are now provided with ambulance stations or surgeries, and where this is the case all eye injuries should be sent direct to the surgery, no treatment being attempted in the workshop. If a doctor is on the premises, the case should be referred to him at once. If the injury is not serious, and he is not available, the nurse in charge of the surgery should render first aid, and subsequently refer the patient to his own doctor or a hospital. It is most desirable that even apparently slight injuries should be seen by a doctor. At any factory where eye injuries are common the nurse should have had some ophthalmic training.

"If there is no ambulance station or nurse, first aid can only be given by a fellow workman who should be instructed as to the routine treatment which may suitably be applied. He should be forbidden to exceed these instructions in any way, otherwise, although

he may be successful in removing the offending particle, infected ulcers may follow the operation or he may even perforate the cornea. First aid is mainly needed to relieve pain, and should, as a rule, be limited either to the use of eye drops (cocaine 0·5 per cent., mercury perchloride 1 in 3,000 in castor oil), which may be applied from a suitable bottle, or to a pad and bandage. A camel's hair brush kept in the appropriate solution may be provided for the removal of visible particles which are not impacted or embedded, but its use should not be encouraged. After relief from pain the patient should be sent at once to a doctor or a hospital."

The chief criticism we should like to make is that 1 in 3,000 perchloride had better be omitted from the drops if the object is the relief of pain, and that the camel's hair brush should not be provided at all.

A further part of the Memorandum deals with the question of eye strain. Broadly speaking, this may be due to defects of vision or to the nature or conditions of the work. Operators employed on munition work should possess and maintain a certain standard, which should not be far below the normal, of visual acuity. Eye strain, including headache, may be one manifestation of general fatigue. The Committee urgently recommends, when workers are examined for glasses, that the nature of the work to be performed should be specified whenever possible. In our experience this is never done, even for patients coming from Woolwich.

There is no mention of the greatly increased danger from trivial eye injuries in the presence of disease of the lacrymal sac. The presence of a mucocele is so easily detected and so liable to lead to severe suppuration as a result of even a trivial corneal abrasion that we should feel inclined to reject for all lathe or grinding work any operative so affected until radically treated.

We consider that the Memorandum, although open to criticism in certain parts, is very good; but we are strongly of the opinion that ophthalmic questions should be referred to a committee of ophthalmic experts, and not be decided upon by a committee which has no ophthalmic surgeon among its members. E. E. H.

The Pathological Effects of Radiant Energy on the Eye: an Experimental Investigation. By F. H. VERHOEFF, A.M., M.D., and LOUIS BELL, Ph.D., with a Systematic Review of the Literature by C. B. WALKER, A.M., M.D. Volume LI, No. 13, of the *Proceedings of the American Academy of Arts and Sciences*, July, 1916.

The monograph of Verhoeff and Bell places the reviewer in a quandary. The latter is desirous to show not only the conclusions reached, but the grounds upon which such conclusions are based, and yet, is practically precluded by limitations of space from doing

justice to both. In the present case, the conclusions are of such importance in view of the amount of talk which has been heard in recent years regarding the effects of ultra-violet radiation, that the reviewer feels compelled to give these conclusions almost in full and to leave the detailed study of the relative physical laws, of the apparatus employed, and, in general, of the experiments by which the authors reached their conclusions, to the critical reader himself.

The actual work by Verhoeff and Bell occupies pages 629 to 759 of the *Proceedings*, and is followed by a systematic review of the literature relating to the effects of radiant energy upon the eye by C. B. Walker. This latter occupies pages 760 to 793 and deals with a bibliography of 420 items. Following this again are eight plates of photomicrographs, spectra, and apparatus.

In Verhoeff and Bell's work the term "abiotic radiation" occurs with great frequency. The term is not anywhere defined, so far as the reviewer has ascertained. "Abiotic radiation" appears to mean radiation of a wave length shorter than 305 $\mu\mu$, or, to put it in another way, radiation is only abiotic when it has a wave-length less than the above figure. The most appropriate definition of the adjective "abiotic" which the reviewer has been able to find is "antagonistic to life." If the meaning is not here properly interpreted the authors' pardon may be asked, accompanied by the wish that, for the sake of those to whom the term is unfamiliar, a definition thereof had been vouchsafed.

The authors' conclusions may now be given, not perhaps textually, but abbreviated only slightly.

The liminal exposure capable of producing photophthalmia to the extent of conjunctivitis, accompanied by stippling of the cornea, is, in terms of energy, about 2×10^6 erg seconds per square centimetre of abiotic radiation of the character derived, for example, from the quartz lamp or the magnetite arc. About $2\frac{1}{2}$ times this exposure is required to produce loss of corneal epithelium.

The abiotic action of the cornea and conjunctiva produced by any radiating sources follows the law of inverse squares, and is directly proportional to the total abiotic energy received. After exposure of the eye to abiotic radiations there is a latent period before any effects, clinical or histological, become perceptible.

The combined effect of repeated exposures to abiotic radiations is equivalent to that of a continuous exposure of the same total length, provided the intermissions are not long enough to establish reparative effects. Actual abiotic damage to the external eye renders it temporarily more sensitive to abiotic action.

Abiotic action for living tissues is confined to wave-lengths shorter than 305$\mu\mu$, at which length abiotic effects are evanescent, while for shorter wave-lengths they increase with considerable rapidity.

For the quartz arc and the magnetite arc the abiotic activity of the rays absorbed by the cornea is 18 times greater than those which are transmitted by it. To affect any media back of the cornea requires, therefore, at least, 18 times the liminal exposure heretofore mentioned.

Even with exposures as great as 150 times the liminal for photophthalmia the lens substance is affected to a depth of less than 20$\mu\mu$, and this superficial effect undergoes in the rabbit complete repair. Such enormously intensive exposures, which are obtained with the magnetite arc and double quartz lens system, may completely destroy the corneal epithelium, corpuscles, and endothelium. The corneal stroma may be strongly affected by waves shorter than 295$\mu\mu$, which it completely absorbs, but is very slightly affected by the remaining abiotic radiation.

The histological changes produced by abiotic radiation are radically different from those produced by heat, and the cell changes are best seen in flat preparations of the lens capsule. The most characteristic change is the breaking up of the cytoplasm into eosinophilic and basophilic granules.

Abiotic radiations apparently depress mitosis. Their action in this respect is materially different from that of heat.

The lens protects completely the retina of the normal eye even from the small proportion of feebly abiotic rays which can penetrate the cornea and vitreous.

Experiments on rabbits, monkeys, and the human subject prove that the retina may be flooded for an hour or more with light of extreme intensity without any sign of permanent injury. The resulting scotoma disappears within a few hours. Only when the concentration of light involves enough heat energy to produce definite thermic lesions is the retina likely to be injured.

The retina of the aphakic eye, owing to the specific and general absorption of abiotic radiations by the cornea and vitreous, is adequately protected from injury from any exposures possible under the ordinary conditions of life, even without the added protection of the glasses necessary for aphakic patients.

Infra-red rays have no specific action on the tissues analogous to that of abiotic rays. Any effect due to them is simply a matter of thermic action, and such rays are, in the main, absorbed by the media of the eye before reaching the retina. Actual experiments made on the human eye show conclusively that no concentration of radiation on the retina from any artificial illuminant is sufficient to produce injury thereto under any practical conditions. Eclipse blindness is due to the action of the concentrated heat on the pigment epithelium and choroid, this heat being almost wholly due to radiations of the visible spectrum within which the maximum solar energy lies.

The abiotic energy in the solar spectrum aggregates hardly a quarter of 1 per cent. of the total. At high altitudes and in clear air it is sufficient to produce slight abiotic affects, such as are noted in snow blindness and solar erythema. The latter is usually accompanied by an erythema due to heat alone.

Erythropsia is not in any way connected with the exposure of the eye to ultra-violet radiations, but is merely a special case of colour fatigue. There is no evidence in the authors' opinion that vernal catarrh and senile cataract are due to radiations of any kind. Glass-blower's cataract is to be regarded as due, not to ultra-violet light, but probably to the over-heating of the eye as a whole with consequent disturbed nutrition of the lens.

Commercial illuminants the authors find to be entirely free of danger under the ordinary conditions of their use. The abiotic radiations, furnished by even the most powerful of them, are too small in amount to produce danger of photophthalmia under ordinary working conditions, even when accidentally used without their globes. The glass enclosing globes used with all practical commercial illuminants are amply sufficient to reduce any abiotic radiations far below the danger point.

Under ordinary conditions no glasses of any kind are required as protection against abiotic radiations. They reduce the total light to the comfortable point. Glasses which cut off both ends of the spectrum and transmit chiefly only the rays of relatively high luminosity, give the maximum visibility with the minimum reception of energy. For protection against abiotic radiation in experimentation, or in the snow fields, ordinary coloured glasses are quite sufficient.

So far as direct destruction of bacteria within the cornea or any other tissue of the body is concerned, abiotic radiations possess no therapeutic value. This is due to the fact that abiotic radiations that are able to penetrate the tissues are more destructive to the latter than to bacteria. ERNEST THOMSON.

CORRESPONDENCE.

INTRA-CAPSULAR EXTRACTION OF CATARACT.

The Editor THE BRITISH JOURNAL OF OPHTHALMOLOGY.

SIR,—In the October to December number of *The Ophthalmic Review* (the last of that journal to appear) Lt.-Colonel J. Fisher, of Jaipur, makes the statement:—

"It is rather unfortunate that all three of "The Presidency" ophthalmic surgeons—Maynard (Calcutta), Herbert (Bombay), and

Elliot (Madras)—condemned Smith's operation before they saw Smith do it (I think I am correct in this). They tried the operation with only a description to guide them."

I feel sure that if Lt.-Colonel Fisher will kindly re-read what I have written on the subject in *The Indian Medical Gazette*, May, 1906, and in subsequent numbers of the same journal, he will find that he is mistaken in this statement, at least, so far as I am concerned. I have never *condemned* Colonel Smith's operation either before I saw him do it or since. It is true that I criticised some of the statements put forward in support of the procedure, and that I persistently asked for a presentation of accurate statistics on which a right judgment of the value of the operation could be formed, but as to the procedure itself, I kept an open mind and urged others to do the same. I travelled over 3,000 miles in order to see Colonel Smith perform the operation. I then went back and tried it on between two and three hundred cases of my own, and eventually decided that I could get better results by the method to which I was accustomed, but even then I did not abandon the attitude which I had first taken up, and which I have outlined in the preceding paragraph.

In cataract extraction, as in every other operative procedure, individuals will prefer different methods, and they can do so without in any sense *condemning* those which do not appeal to them. The case for the intra-capsular operation will rest not on the statements of any one man, but on the experience of surgeons generally. Such experience will be influenced largely by the production of careful statistics on the one side or on the other. That was my position eleven years ago, and is so still.

Yours truly,
R. H. ELLIOT,
Lt.-Col. I.M.S. (Retired.)

WELBECK STREET,
CAVENDISH SQUARE, W.,
December 17th, 1916.

TRANSILLUMINATION.

The Editor of THE BRITISH JOURNAL OF OPHTHALMOLOGY.

DEAR SIR,—I have read the "Memorandum on Transillumination," by George Young, in the November number of *The Ophthalmoscope*, and can testify to the efficiency of the electrically-lighted ophthalmoscope for this purpose.

Such an examination can, however, be made still more readily with the May Electric Ophthalmoscope. This instrument is, like all other electric ophthalmoscopes, a modification of Dennett's model. It differs from the others in the absence of the usual reflecting mirror;

this is replaced by a solid rod of glass which acts both as a condensor of the rays of light proceeding from the lamp, and as a reflector of these rays by means of the upper prism end of the glass rod; as a result of this innovation there is unquestioned superiority of illumination, as compared to that of any other electrically-lighted ophthalmoscope.

This illumination is so satisfactory that if a small piece of rubber tubing (½ inch long) be slipped over the lamp, the pupil can be transilluminated by applying the end of the tubing *to the cutaneous surface of the lids* and pressing against the eyeball; thus no local anæsthesia is necessary; there is no contact with the sclera; and the procedure is, therefore, free from any discomfort to the patient.

I agree with Dr. Young that a special instrument for transillumination is unnecessary.

Yours very truly,

CHARLES H. MAY.

MADISON AVENUE,
NEW YORK.

NOTES.

Deaths. WE regret to announce the death of Lieut.-Colonel Sir Frederick S. Eve, which occurred at his London residence, after a very brief illness, on December 15th. Sir Frederick was a general surgeon of high repute, and he was once ophthalmic house-surgeon to St. Bartholomew's Hospital, and from 1888 to 1889 was lecturer on ophthalmic surgery at the London Hospital. He received the honour of knighthood in 1911. At the time of his death Eve was Vice-President of the Royal College of Surgeons of England.

The world and ophthalmic science are the poorer by the loss of Wendell Reber, whose death from pneumonia took place at the end of December last. We hope to publish some details of the life of this eminent American ophthalmic surgeon, of Philadelphia (who had many friends on this side of the Atlantic), in a subsequent number.

The deaths of the following American ophthalmologists are also announced:—E. H. Grannis, of Menominee, Mich., aged 62 years; H. Weynant, of Philadelphia, aged 47 years.

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Munition Workers. THE *Lancet* (9th December, 1916) calls attention to the most recent Memorandum of the Health of Munition Workers Committee (noted elsewhere

in the present issue), in which a letter from an ophthalmic surgeon in an industrial district is quoted. The ophthalmic surgeon found a 10 per cent. increase in the cases of impacted foreign bodies coming to the hospital at which he serves. This increase he attributes to the growing preference of the worker for their removal by a skilled hand rather than by a fellow-worker. The Memorandum states that the avoidance of eye accidents in munition works is in large measure a matter of reasonable precaution. We should say that in any works, whether munition or otherwise, this is the case. Two forms of eye guard have been designed by the Committee, both of which provide for ventilation and easy replacement of the glasses. First aid by fellow workers should, the Memorandum states, be confined to the use of eye drops, with or without a pad and bandage. We are somewhat at a loss to understand the meaning of the following paragraph : "The misdirected efforts of fellow-workers to remove foreign bodies—the only fruitful source of sepsis—are to be replaced by the attention of the factory nurse, who should have had some ophthalmic training."

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The Blind at St. Dunstan's.

ON 11th December, before the Medical Society of London, a deeply interesting account was given by Mr. Arnold Lawson, of the management of the Blind at St. Dunstan's, Regent's Park. He pointed out that a complete revolution in the training of the Blind had been effected by the War. Formerly, the inmates of institutions for the Blind were blind from infancy or became so in old age. Now the distinguishing features of the War Blind were youth and buoyancy. At St. Dunstan's self-pity was not countenanced, and the inmates were taught to accept their lot as an inconvenience, and not as a grave defect. They were educated to regain their independence as quickly as possible, and to that end, after some training, were left to themselves without guides or other helpers, upon whom they would ultimately have to depend. They learned to read and to write Braille type, and were then taught suitable handicrafts by instructors, who themselves were blind. Finally, after several months' training, the blind man was set up in business, although he and his work continued to be supervised by an after-care department.

The scheme, a comprehensive one, was under the general direction of Sir Arthur Pearson. It included accommodation for 180 men at St. Dunstan's and for 200 more at Regent's Park College, as also four houses elsewhere for officers, as well as two convalescent homes, one at Brighton and the other at Torquay. At present there were 260 men at St. Dunstan's and the other houses, whilst 128 others

were either in hospitals or elsewhere awaiting treatment. No fewer than 125 men had been fully trained and settled in business for themselves.

It would be the merest truism to say that the work inaugurated and conducted by Sir Arthur Pearson is of national importance.

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Appointments. DR. JOHN ROWAN has been appointed Surgeon to the Glasgow Ophthalmic Institution.

Mrs. Frank Thomas has been appointed Supervisor of the Eye Clinic by the Swansea Education Committee.

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The Carnegie Trust and the Blind. THE Carnegie United Kingdom Trustees consider that the work of the Royal Normal College and Academy for the Blind is national in character. The Trustees have submitted the following offer, which has been accepted by the authorities of the Royal Normal College :—"The Trustees are prepared to make an offer of a grant of £12,500 on condition that a sum of £25,000 is raised from other sources for the permanent endowing of the College. The sum of £12,500 represents, with accrued interest, the present capital indebtedness of the institution. Of this £12,500, £5,000 is immediately needed to meet a banker's loan of £3,000 and £1,500 owing in respect of the Pianoforte Tuning Building. The sum of £5,000 will, therefore, be paid as soon as a similar sum is raised from other sources, and the offer will hold good until the end of February next. The remaining £7,500 of the grant will be paid when the further sum of £20,000 has been subscribed from other sources, and the promise will hold good until 31st December, 1918."

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Ophthalmia Neonatorum. 25,000 dollars were recently awarded by an American judge to the parents of an infant against a graduate midwife, who was alleged to have neglected the baby's eyes at birth.

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Royal Westminster Ophthalmic Hospital. THE Royal Westminster Ophthalmic Hospital asks for special help in its centenary year, basing its appeal largely on the ground that it treats soldiers in need of attention, whether on account of injury or

disease. Contributions will be gratefully received by the acting secretary at the Hospital, King William Street, London, W.C.

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Oxford Congress, 1917. DR. GEORGE M. GOULD, of Atlantic City, N.J., will open the discussion upon "The Correction of Errors of Refraction" at the Oxford Ophthalmological Congress in July next.

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Sir W. J. Collins. SIR WILLIAM J. COLLINS, K.C.V.O., senior surgeon to the Royal Eye Hospital, London, has been elected M.P. for Derby, in succession to Sir Thomas Roe, retired.

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Mr. H. L. Eason. CONGRATULATIONS to Temp. Lieut.-Colonel H. L. Eason, senior ophthalmic surgeon to Guy's Hospital, upon whom has been bestowed the C.M.G.

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Mr. A. F. MacCallan. THE KING has been pleased to grant to Mr. A. F. MacCallan permission to accept and to wear the decoration of the 3rd class of the Order of the Nile, conferred upon him by his Highness the Sultan of Egypt in recognition of valuable services.

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Dr. Gordon Holmes. THE name of Temporary Lieutenant-Colonel Gordon M. Holmes was mentioned in a dispatch from Field-Marshal Sir Douglas Haig, and published in a supplement to the *London Gazette*, dated January 4th.

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Bellevue Hospital, New York. AN Ophthalmological Service has been added to the other departments of the Bellevue Hospital, New York. It is located in the new surgical pavilion, but is entirely distinct from the rest of the hospital, having its own operating, examining, and dressing rooms, a staff of attending surgeons, special internes and nurses; its capacity for the present

will be 50 beds. The service is in charge of Dr. Charles H. May, attending surgeon, who will have as his principal assistants Drs. Julius Wolff and John M. Wheeler.

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Ourselves. IN noticing the advent of THE BRITISH JOURNAL OF OPHTHALMOLOGY, our contemporary, *La Clinique Ophtalmologique* (Paris) does not hesitate to say that the example might well be imitated by several of the French ophthalmological journals. It is kind enough to predict great success for ourselves.

FUTURE ARRANGEMENTS.

	1917.	
Midland Ophthalmological Society	February 6th.	Birmingham.
Section of Ophthalmology, Royal Society of Medicine.	February 7th.	1, Wimpole Street, London, W.
Midland Ophthalmological Society	April 3rd.	Birmingham.
Ophthalmological Society of the United Kingdom	May 3rd, 4th, and 5th.	London.
Midland Ophthalmological Society	June 5th.	Oxford.
Section of Ophthalmology, Royal Society of Medicine.	June 13th.	1, Wimpole Street, London, W.